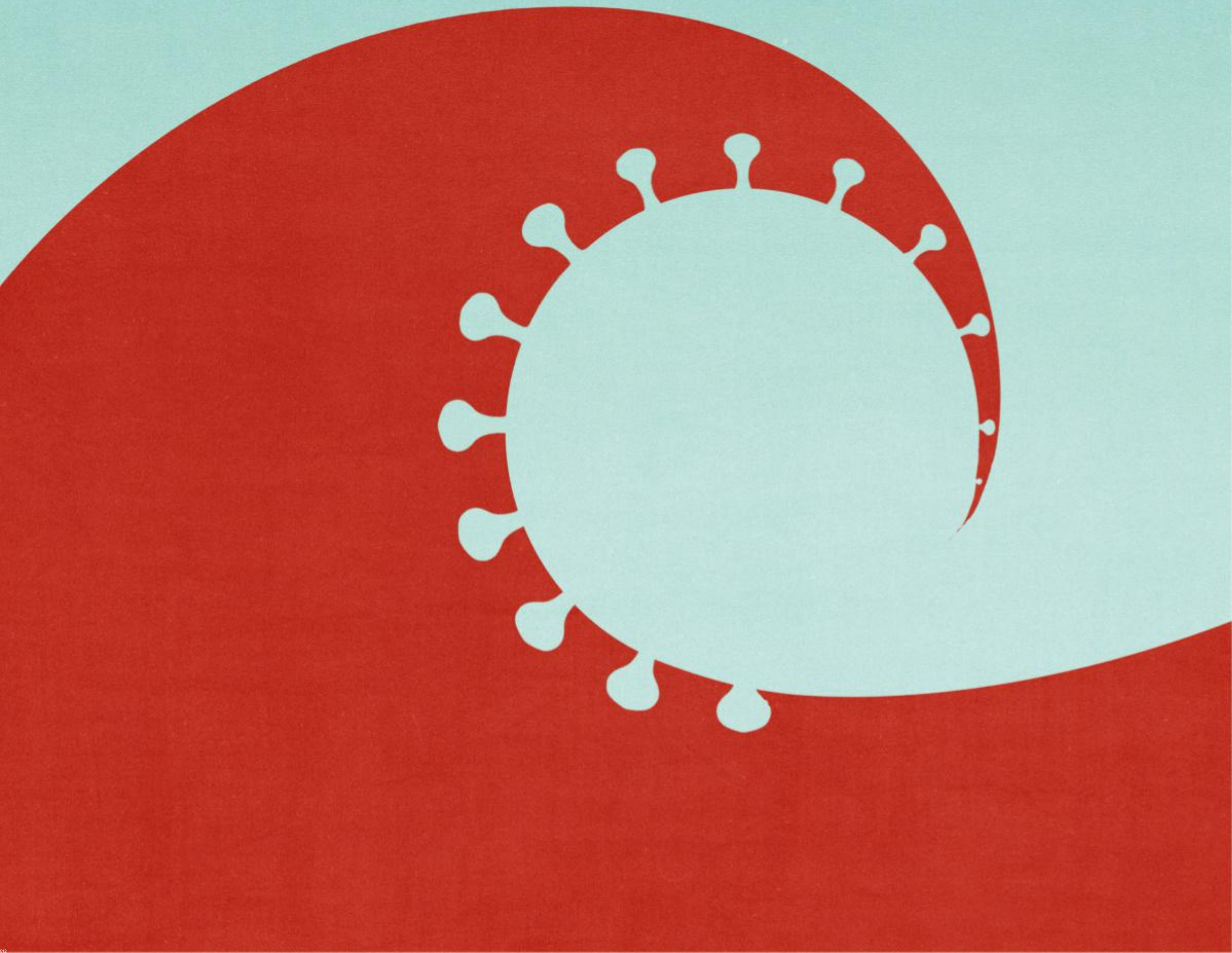
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EXIT WAVE

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The Economist

Volume 446 Number 9328

Published since September 1843
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Amsterdam, Beijing, Berlin, Brussels, Chicago, Dakar, Dallas, Dubai, Johannesburg, Madrid, Mexico City, Moscow, Mumbai, New Delhi, New York, Paris, San Francisco, São Paulo, Seoul, Shanghai, Singapore, Tokyo, Washington DC

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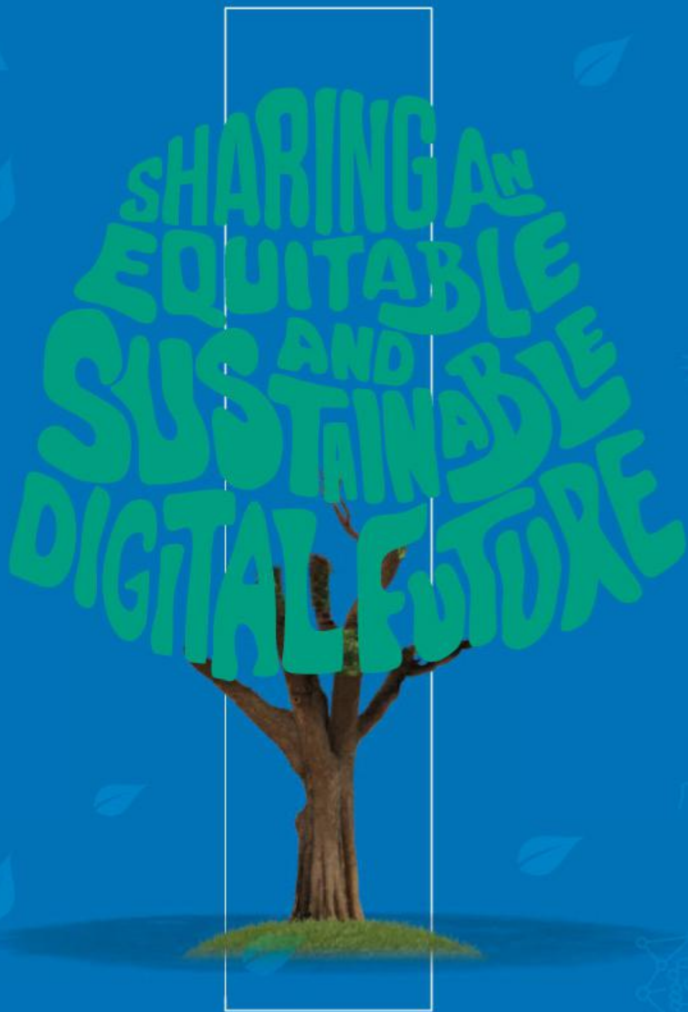
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The world this week

After nearly three years of self-imposed isolation, **China** said it would reopen its borders on January 8th. People arriving from abroad will no longer have to quarantine. The move comes as covid-19 tears through the country. Hospitals are struggling to deal with the sick. The outbreak is now spreading to smaller cities and rural areas with fewer medical resources. Several countries, including America and Britain, are now demanding that incoming travellers from China take a covid test first.

Ukraine ushered in the new year with a devastating missile strike on a Russian barracks in occupied Donetsk province. At least 400 soldiers were killed, Ukrainian sources said, though Russia has admitted only to 89 losses. For its part, Russia continued its strikes on civilian targets, but to limited effect as Ukraine becomes steadily better at interception.

Kosovo's prime minister, Albin Kurti, called on NATO to increase its presence in the country. Ethnic Serbs living in north Kosovo began dismantling road blocks they had set up in December in protest against the arrest of a former Serb policeman. The removal of the barriers has eased a spike in tensions between Kosovo and Serbia.

The euro became **Croatia's** official currency on January 1st. The south-eastern European country is the 20th member of the euro zone.

Thousands of **Kurds** travelled to **Paris** to attend the funerals of three Kurds shot dead by a man who said he wanted to "murder migrants". Kurds clashed with police in the French capital after the attack.

The British government in Westminster seemed set to clash with the government in Edinburgh over the Scottish Parliament's approval of an act allowing people to **change gender** with little fuss. The British government is considering whether to block the law or refer it to the Supreme Court, which could spark a big constitutional row.

Myanmar's junta announced another amnesty to free thousands of prisoners. It was not clear if any political prisoners would be among them. Aung San Suu Kyi, who was ousted as leader two years ago, has been handed a further seven years in jail in relation to trumped-up charges of corruption. In December the UN Security Council passed its first resolution on Myanmar since the coup, calling on the army to end the country's violence.

Luiz Inácio Lula da Silva was inaugurated as **Brazil's** president, exactly 20 years after he first took office. Lula plans to expand social-welfare programmes for the poor and to reduce deforestation, which increased under the watch of his predecessor, Jair Bolsonaro. Mr Bolsonaro broke with tradition by spending inauguration day in Florida.

Burkina Faso and **Mali**, two countries in the Sahel run by military dictatorships, soured relations with countries supporting them in battling jihadists. Burkina Faso kicked out the UN representative and asked France to withdraw its ambassador. It is seeking closer ties with Russia. Mali imposed long prison sentences on soldiers from Ivory Coast it accused of being mercenaries. The soldiers were supporting a United Nations peacekeeping mission.

Binyamin Netanyahu was sworn in for a sixth time as **Israel's** prime minister. His cabinet is the most right-wing in the country's history.

America's Supreme Court ruled that **Title 42** should stay in place until it has had a chance to hear arguments and give its opinion on the policy. Title 42 was introduced as a pandemic measure in March 2020 and allows American officials at the Mexican border to swiftly expel illegal migrants. It was set to expire in late December.

The Republicans' control of the new Congress got off to a chaotic start when **Kevin McCarthy's** bid for Speaker of the House was blocked by a group of hard-right congressmen.

Appearing at a federal court in Manhattan, **Sam Bankman-Fried** pled not guilty to fraud and money-laundering charges in relation to the collapse of FTX, a crypto exchange that he ran. Mr Bankman-Fried is currently on bail of $250m. His criminal trial is set to start on October 2nd.

ExxonMobil filed a lawsuit at the European General Court against the EU's new **windfall tax** on oil firms, arguing that only individual countries have such power. Exxon, which made huge profits in 2022, also claims that the tax impairs investment in the industry.

The post-pandemic retrenchment of tech firms continued into the new year. **Amazon** confirmed that it is cutting 18,000 jobs, mostly in its e-commerce division. **Salesforce**, a software giant, announced that it is laying off 10% of its workforce. Its CEO admitted that he had "hired too many people" heading into an economic downturn.

Stockmarkets ended 2022 on a low note. During the year the S&P 500 fell by 19%, the tech-heavy NASDAQ composite by 33% and the Dow Jones Industrial Average by 9%, their worst performance since 2008. Apple shed $846bn in market value and Amazon $834bn. It wasn't all bad news. Despite big falls in March and September, Britain's FTSE 100 actually finished 2022 slightly above its mark at the start of the year.



Exit wave

How China's reopening will disrupt the world economy

For the better part of three years—1,016 days to be exact—China will have been closed to the world. Most foreign students left the country at the start of the pandemic. Tourists have stopped visiting. Chinese scientists have stopped attending foreign conferences. Expat executives were barred from returning to their businesses in China. So when the country opens its borders on January 8th, abandoning the last remnants of its "zero-covid" policy, the renewal of commercial, intellectual and cultural contact will have huge consequences, mostly benign.

First, however, there will be horror. Inside China, the virus is raging. Tens of millions of people are catching it every day (see China section). Hospitals are overwhelmed. Although the zero-covid policy saved many lives when it was introduced (at great cost to individual liberties), the government failed to prepare properly for its relaxation by stockpiling drugs, vaccinating more of the elderly and adopting robust protocols to decide which patients to treat where. Our modelling suggests that, if the virus spreads unchecked, some 1.5m Chinese will die in the coming months.

There is not much outsiders can do to help. For fear of looking weak, the Chinese government spurns even offers of free, effective vaccines from Europe. But the rest of the world can prepare for the economic effects of the Communist Party's great U-turn. These will not be smooth. China's economy could contract in the first quarter, especially if local officials reverse course and seal off towns to keep cases down. But eventually economic activity will rebound sharply, along with Chinese demand for goods, services and commodities. The impact will be felt on the beaches of Thailand, across firms such as Apple and Tesla, and at the world's central banks. China's reopening will be the biggest economic event of 2023.



As the year progresses and the worst of the covid wave passes, many of the sick will return to work. Shoppers and travellers will spend more freely. Some economists reckon that GDP in the first three months of 2024 could be a tenth higher than in the troubled first quarter of 2023. Such a sharp rebound in such a huge economy means that China alone could power much of global growth over the period (see Finance & economics section).

The party is banking on it. It hopes to be judged not on the tragedy its incompetence is compounding, but on the economic recovery to follow. In Xi Jinping's year-end address, the party chief thanked pandemic workers for bravely sticking to their posts and, while nodding to "tough challenges" ahead, promised that "The light of hope is right in front of us." He sounded eager to look past the pandemic, emphasising the chances of a swift economic revival in 2023 and offering reasons to be proud of living in a rising China under party rule (see Chaguan).

The ending of China's self-imposed isolation will be good news for places that depended on Chinese spending. Hotels in Phuket and malls in Hong Kong suffered as Chinese were locked up at home. Now would-be travellers are flocking to travel websites. Bookings on Trip.com rose by 250% on December 27th compared with the previous day. Economists are pencilling in a GDP boost for Hong Kong of as much as 8% over time. Exporters of the commodities that China consumes will also benefit. The country buys a fifth of the world's oil, over half of its refined copper, nickel and zinc, and more than three-fifths of its iron ore.

Elsewhere, though, China's recovery will have painful side-effects. In much of the world it could show up not in higher growth, but in higher inflation or interest rates. Central banks are already raising rates at a frenetic pace to fight inflation. If China's reopening increases price pressure to an uncomfortable degree, they will have to keep monetary policy tighter for longer. Countries that import commodities, including much of the West, are at the greatest risk of such disruption.

Take the oil market. Rising Chinese demand should more than compensate for faltering consumption in Europe and America, as their economies slow. According to Goldman Sachs, a bank, a rapid recovery in China could help push the price of Brent crude oil to $100 a barrel, an increase of a quarter compared with today's prices (though still below the heights reached after Russia invaded Ukraine). Rising energy costs will prove another hurdle to taming inflation.

For Europe, China's reopening is another reason not to be complacent about gas supplies later in the year. Zero-covid, by suppressing China's demand for gas, made it less costly than it otherwise would have been for Europe to fill its storage tanks in 2022. A strong recovery in China will mean more competition for imports of liquefied natural gas. In December the International Energy Agency, a forecaster, warned of a scenario in which winter starts punctually in 2023 and Russia cuts off piped gas to Europe entirely. That could result in shortages amounting to as much as 7% of the continent's annual consumption, forcing it to introduce rationing.

For China itself, the post-pandemic normal will not be a return to the status quo ante. After watching the government enforce zero-covid in a draconian fashion and then scrap it without due preparation, many investment houses now see China as a riskier bet. Foreign firms are less confident that their operations will not be disrupted. Many are willing to pay higher costs to manufacture elsewhere. Inbound investment in new factories seems to be slowing, while the number of companies moving business outside China has jumped, by some accounts.

Normal not normal

As Chinese officials struggle to repair the damage, they should remember some history. China's previous great reopening, after the stultifying isolation of the Mao years, led to an explosion of prosperity as goods, people, investment and ideas surged across its borders in both directions. Both China and the world have benefited from such flows, something politicians in Beijing and Washington seldom acknowledge. With luck, China's current reopening will ultimately succeed. But some of the paranoid, xenophobic mood that the party stoked during the pandemic years will surely linger. Exactly how open the new China will be remains to be seen. ■

Britain and the EU

The end of magical thinking

Relations with Europe have caused a decade of turmoil in British politics. Here's how to use the next ten years better

TEN YEARS ago this month, David Cameron, Britain's prime minister at the time, gave a speech at the London headquarters of Bloomberg, a news organisation. In it Mr Cameron outlined his cunning plan to cement Britain's place in the European Union, by triggering a fundamental reform of the bloc and then offering Britons an in-out referendum on membership. That went well. The 2016 vote to leave the bloc has exacerbated Britain's economic malaise, gumming up trade and muting investment. It has soured Britain's relationship with many of its natural allies and weakened the bonds of its own union.

Worst of all, it has infected British politics with a destructive strain of magical thinking. Mr Cameron himself was an early victim, badly overestimating the EU's willingness to change its fundamental principles in order to suit Britain. Brexiteers have been high on their own pixie dust from the start, whether conjuring up the gains to be had from leaving the EU or wishing away the issue of the Irish border. Remainers, too, succumb to hocus-pocus if they think that the split can be simply undone.

There is a path to a better relationship with Europe (see Britain section). Growing numbers of Britons regard the decision to leave the bloc as a mistake. The EU would like to be on better terms with its difficult neighbour. But taking that path will require an end to magical thinking. It will be a slow-going and incremental process, not an impulsive and revolutionary one. It will mean nurturing trust and consensus, rather than holding winner-takes-all referendums and presenting ultimatums in Brussels. Anyone can jump off a cliff. Climbing one is far harder.



For Brexiteers, that means recognising the damage that Brexit has done. The Bank of England has estimated that Brexit depressed investment by almost 25% over the five years to 2021. One think-tank reckons that the economy would be more than 5% bigger now if Britain had stayed in the EU. Yet among the Brexit faithful truth-telling is still heresy. In December the Conservative government trailed modest reforms to the financial-services industry as a Brexit dividend, when many of the changes had nothing to do with the EU. The government is still committed to replacing or repealing all retained EU legislation by the end of 2023, a goal that promises pointless disruption.

For Remainers, realism means putting aside ideas of rejoining the bloc. If *The Economist* had a magic wand, it would gladly turn back the clock to 2016, when Britain enjoyed a privileged status as an influential EU member with a host of opt-outs. But rejoining will be vetoed by EU governments until there is a rock-solid political and social consensus in favour of membership. Polls suggest Britons want a close relationship with the EU. But there is much less enthusiasm for Europe as a project of political integration. Returning to the question of membership now would reanimate the toxic polarisation of the Brexit years.

The pragmatic path to a better relationship with Europe would instead comprise three stages: normalise, build, reimagine. First, Britain must normalise its ties with Brussels. Rishi Sunak, the prime minister, already deserves some credit on this score: quiet co-operation in areas from the North Sea (see leader) to migration is under way. But that will count for little if he cannot reach a workable deal on the Northern Ireland protocol. Doing so would unlock more goodies, from participation in scientific-research schemes to closer co-operation among regulators.

Next, build. The thin Trade and Co-operation Agreement (TCA) negotiated by Boris Johnson will come up for review in 2026. That is a vital opportunity to fatten the deal. The Labour Party, which may well be in power then, has proposed adding a sensible clutch of bolt-on agreements, principally easing the movement of some people and of food products. Labour must watch its own tendency towards magical thinking, which is to assume that not being Tories will be enough to win the EU over. But with hard diplomatic graft, it is possible to expand the TCA.

Even these revisions will only marginally offset the economic harm done by leaving the EU. Towards the second half of this decade, work must start on reimagining the Britain-EU relationship afresh. The "Norway" option—being a non-voting member of the single market—would have been a sensible holding position for Britain on the way out of the bloc. But a deal that suits Norway, a small, stable place whose main exports are oil, gas and fish, is much less suited to a large, truculent services-based economy like Britain. More promising is the terrain sketched out by Theresa May in the aftermath of the Brexit vote: deepening market access in areas such as goods and agriculture in exchange for adopting EU law, while retaining autonomy in services. Rejoining the customs union may eventually be possible.

This might strike many as yet another form of magical thinking. It would certainly be difficult for both sides. For the British, it would mean abandoning a dogmatic aversion to EU law for a cannier approach rooted in strategic self-interest. For Tory Eurosceptics, this will sound like betrayal. Yet if public support for their project is not to evaporate, the economy needs to grow. That requires deeper access to Britain's biggest export market.

No rabbits, less cake

For the EU, it would mean softening its aversion to the idea of Britain cherry-picking bits of the single market. But the scenario it once feared, of Britain becoming a dynamic Singapore-on-Thames, is remote. Binding Britain back into the EU's regime for chemicals, agriculture or state aid would be a boon for a bloc that aspires to be a regulatory superpower. And the benefits of a more constructive and respectful relationship with Britain are not just economic, as the war in Ukraine has demonstrated.

A bespoke relationship with Britain would also fit into a wider rethinking of Europe's architecture. Over the coming decade the EU will need to ponder how to manage the aspirations of Ukraine and the western Balkan states which wish to join (see Charlemagne). Old debates about variable geometry and a multi-speed Europe will be given fresh impetus. Forging an enduring relationship between Britain and the EU will take time, hard work and realism. But there is still room for imagination. ■

Wind power

Northern delights

Why the gusty North Sea could give Europe an industrial edge

Fears about the fate of European industry abound. Russia's invasion of Ukraine and the ensuing gas crunch have dealt it a cruel blow. BASF, the world's largest chemicals-maker, is shifting production away from its headquarters in Ludwigshafen in Germany. Nearly a quarter of the country's revered *Mittelstand* firms are reported to be considering moving part of their operations abroad. And even as energy prices have fallen back, America's protectionist and subsidy-laden Inflation Reduction Act is feeding fresh worries that industry might be lured away from the old continent.

One unlikely bright spot is the part of Europe with the grimmest weather. As we report this week, a new economy based on renewable energy is taking shape in and around the North Sea (see Business section). Rather as hydropower fuelled Lancashire's cotton mills and cheap coal the Ruhr valley's steel furnaces in the early days of industrialisation, the promise of cheap, abundant wind power is attracting industry and infrastructure to Europe's northern coasts. If this fledgling economy thrives, it could give the continent a new, greener industrial edge.



The North Sea's strong winds and relative shallowness together make it a huge basin of potential energy. Thanks to taller and more powerful wind turbines, more efficient undersea cables and other technological advances, it is now increasingly being tapped. A group of nine countries near this body of water has plans to install 260GW of offshore wind power by 2050—nearly five times that produced worldwide today, and enough to power all of the European Union's nearly 200m households.

All this is breathing life into a new coastal economy. Esbjerg, a town in south-west Denmark that some consider the capital of the North Sea economy, now boasts companies that make equipment to build and maintain wind turbines. Many once supplied the offshore-oil-and-gas industry, but have shifted their attention to greener customers.

Nordic countries are beginning to attract energy-hungry battery plants and data centres. On Germany's North Sea coast, a plan is afoot to build facilities to turn easier-to-transport ammonia into hydrogen, to fuel factories in nearby industrial parks. Even parts of steelmaking could eventually move north, as hydrogen replaces coal or gas in the manufacturing process.

For this economy to take off, though, Europe will need to focus its energies. A good start would be to cut red tape: getting a permit to build a new wind farm can take ten years, or even longer. Countries bordering the North Sea will need to work together to ensure that the seabed does not become overcrowded with cables and pipes and that infrastructure is looked after. The rise of the new coastal economy could be fiercely resisted in the old industrial heartlands. It will fall to governments to ease the transition.

A favourable wind

The pay-off will be handsome. Done right, the North Sea economy could be a model for other parts of the continent, including the Iberian peninsula, with its huge solar potential. Such shifts in its economic geography will not only help Europe achieve its climate ambitions and rebalance its energy mix away from Russia and other autocracies: they could even give rise to the sort of green corporate giants that Europe badly needs. ■

Starlink

Internet from the sky

The success of Starlink in Ukraine has ignited a new space race

"It's a fact: we're in a space race." So said Bill Nelson, the boss of NASA, on January 1st. If China managed to land on the Moon before America returned there, he warned, it could seize lunar resources for itself, and even tell America: "Keep out, we're here, this is our territory."

Mr Nelson is right to foresee a space race, but wrong to focus on the Moon. It has symbolic value, but no useful resources that cannot be obtained much more easily back on Earth. The next space race has been triggered by Russia's invasion of Ukraine. It is happening closer to Earth. And it is one which America, thanks largely to a single company, is winning.

The company is SpaceX. Founded by Elon Musk to enable the colonisation of Mars, it makes very cheap, reusable rockets, whose first stages return from the upper atmosphere, landing gracefully on their tails. They have made the firm a space superpower: SpaceX now flies more things into orbit than all other companies and countries combined.

Since 2019 it has put that capacity to use building Starlink, a "mega-constellation" of satellites designed to beam the internet to places unreached by conventional broadband. In three years SpaceX has launched around 3,500 Starlink satellites, roughly half the total number of active satellites now in orbit. It plans to launch as many as 40,000.

Starlink is aimed at consumers. But early in the war Ukraine's government asked SpaceX to send it the small, portable dishes that allow users to connect to the network. As our Briefing explains, it has since become vital to the Ukrainian war effort. Soldiers use it to communicate, identify targets and upload footage for PR purposes. Satellite internet is not a new idea, even in a war zone. But Starlink represents a step-change in two ways. One is ▸▸

the sheer amount of capacity it offers. Previously, satellite links were largely reserved for senior officers, headquarters and drone pilots, with the bulk of lower-level communication handled by radio. Starlink means front-line troops can sling around videos, images and messages in real time, even as they advance beyond the reach of mobile networks. That provides the sort of tactical agility vital to modern warfare.

The second is its resistance to attack. Starlink has, so far, survived attempts to jam or hack it. Russia has said that its use in Ukraine makes it a legitimate military target. But whereas traditional satellite networks, made up of small numbers of big, complicated satellites, are vulnerable to anti-satellite missiles, Starlink is not. The number of satellites, and the speed with which SpaceX can replace them, make trying to shoot it down futile. The firm averaged around a launch a week in 2022, and expects to go even faster this year.

There are downsides to relying on a whimsical tycoon for vital infrastructure. Mr Musk has complained about the cost of subsidising Ukraine's use of Starlink, which he says runs to $100m or so. He backed down after a backlash, but was surely correct. Charity is no way to run a war: no one expects Lockheed Martin to donate missiles. Better for America's government to cover the cost, as it does with other military aid.

In October a row erupted with Ukraine's government, when Mr Musk suggested a peace plan that involved Russia keeping hold of Crimea, which it invaded in 2014. Although relations have been mended (at least in public), SpaceX is still reluctant to let Ukraine use its system to launch attacks in occupied territory, or inside Russia itself.

But, generally speaking, the system has performed well. In 2022 SpaceX unveiled Starshield, a division aimed at adapting Starlink for government and military customers. (America's armed forces had been experimenting with Starlink even before the invasion.) America's friends and rivals have taken note, too. As with GPS, which proved so useful that many other countries decided they must have sovereign systems of their own, Europe, China and Russia are all racing to build their own mega-constellations. China and Russia are trying to come up with ways to attack or disrupt Starlink should the need arise. The race is on. For now, though, America, thanks to SpaceX, has a huge lead. ■

House Republicans

Unspeakable

What the Kevin McCarthy saga portends for America's Congress

With the anguish of someone who has spent a decade pursuing a prize, only to see it slipping away from his grasp, Kevin McCarthy told his colleagues in the House Republican caucus, "I've earned this job." And, in a way, he had. The Republican from Bakersfield has kissed an army of frogs, including lobbyists, donors and cranks like congresswoman Marjorie Taylor Greene, to shore up his position, only for 20 House Republicans to turn around and accuse him of infidelity. This tale has its comic side: at one point Matt Gaetz, one of the "Never Kevin" Republican members, wrote to the Architect of the Capitol complaining that some guy called Kevin had moved his desk into the Speaker's office and that it should be removed forthwith. But the McCarthy saga—the kind of power tussle and public humiliation that Washington loves—also augurs ill for the progress of important legislation in the 118th Congress.



Choosing the Speaker of America's House of Representatives, an important office whose holder is second in line for the presidency, ordinarily requires only one round of voting. The last exception to this was a century ago, when progressive Republicans held up their party's candidate. With no Speaker, no legislation can progress and no new members can be sworn in. This leaves the people temporarily without representation. The move is therefore a drastic one for the Never Kevins to make. So why did they do it?

Not, surely, in opposition to Mr McCarthy's proposed agenda. Released before the midterm elections in November 2022, his "Commitment to America" would struggle to fill a postcard with policies that are within the power of Congress to enact. Nor do the Never Kevins have much of an agenda themselves. Instead, the plan seems to have been to break the toys so that nobody else can play with them. That dynamic has been present in the Republican caucus for a while. John Boehner, who was besieged by the "Hell No" caucus of House Republicans when he was Speaker from 2011 to 2015, observed: "What they're really interested in is chaos…Every time they vote down a bill, they get another invitation to go on Fox News or talk radio. It's a narcissistic—and dangerous—feedback loop." And it is getting worse.

While this was going on, Democrats lined up in an orderly fashion behind Hakeem Jeffries, a moderate Democrat from New York. After his elevation to Minority Leader-elect, Mr Jeffries said po-faced things about the chaos on the other side being a sad day for democracy, while his colleagues tittered at the McCarthy spectacle. If they were less concerned with extracting partisan advantage, Democrats might settle on some sensible Republican to back as Majority Leader and hope that a few Republicans could support the same candidate. There is no constitutional reason why the moderates in both parties could not club together, seize control of the legislative agenda and tell the extreme wings of their parties to lump it. Alas, party discipline, tribal loyalty and the threat of primary challengers combine to make this impossible. Instead, Republicans will struggle on until they have a Speaker.

A weakened Speaker will make it even harder for Congress to pass contentious legislation this year. One beholden to the House Republicans' berserker caucus could find it difficult to avoid a government shutdown, to raise the debt ceiling or to provide additional support to Ukraine's armed forces. This comes after Congress had been on a winning streak, reforming the process for certifying elections and reaffirming gay marriage as the law of the land in 2022. Even divided Congresses can sometimes accomplish quite a lot (see Graphic detail). But this one is setting out with lead weights attached to its boots. ■

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Social rights in Britain

You claim that Britain would be following left-wing governments in trying to entrench social rights in its constitution ("A test of radicalism", December 10th). In fact, Britain is a global outlier in this regard and the recommendation would simply align it with most countries around the world, particularly in Europe.

The Toronto Initiative for Economic and Social Rights data set shows that in 2013, at least 160 constitutions contained at least two economic and social rights, 26 of them as aspirational rights, 75 as legal rights and 59 with a mixture of both. In 2016 environmental rights were present in 68% of constitutions and were justiciable in 42%. The right to health was judicially enforceable in 74 countries. The right to housing is present in 42% of the constitutions. Child protection, education, health and social security appear in two-thirds of them. The right to education is present in 81% of constitutions and can be legally tested in 59%.

Social rights are proclaimed in a number of international human-rights treaties, the most significant being the 1966 International Covenant on Economic, Social and Cultural Rights, signed and ratified by Britain and more than 170 other countries around the world. As a matter of international law, countries bear the responsibility to show how they give effect to these rights in their domestic legal order, including the provision of legal and judicial remedies.

KOLDO CASLA
Director
Human Rights Centre Clinic
University of Essex
Colchester

"The strange case of Britain's demise" (December 17th) referred to a survey conducted in 1951 which found that half of the respondents in Britain were unable to name a single British colony, though someone suggested Lincolnshire. In 2016 a large majority of people in Lincolnshire voted for Brexit, the colony's revenge. In the low-wage town of Boston three-quarters of the voters opted to leave the European Union. Britain was pushed towards historic political change by such isolated places. The key to understanding the strange case of Britain's demise is not the "violence… inflicted on the body politic" by Brexit. It is the casual neglect which for generations has been inflicted on the poorest regions of this country.

IVOR MORGAN
Lincoln, Lincolnshire

Who has the final say?

Another way of looking at Canada's "notwithstanding clause" is that it was meant to give the elected legislature the last word ("Charter fight", December 10th). This is the case in so many other democracies, including Britain's. Is *The Economist* also in favour of superseding the British Parliament's supremacy on the most fraught moral and political issues with the subjective views of nine unelected, unaccountable, and generally upper-middle-class judges? Do you look at America's court-driven decision-making and think, that is the political system Canada should emulate? Personally, I'll take democracy, with all its flaws.

JOSH HUTCHINSON
Vancouver

You stated that no other constitution "contains such an expansive weapon" for a government, because the notwithstanding clause allows the legislature to override fundamental rights. Yet arguably, the United Kingdom's constitution does that too. Parliament can legislate to curtail any fundamental right that it likes. No provision of the Human Rights Act, or any other statute, would empower British courts to stand in the way of primary legislation that mandated workplace languages, or banned religious symbols, or restricted union activity. Instead, the judges in the House of Lords (the predecessor body to the British Supreme Court) held in 1999, in a case called *ex parte Simms*, that fundamental rights cannot be overridden by general or ambiguous words and express language is required in primary legislation to curtail the rights of individuals. That is, in effect, a notwithstanding clause, but coming from the other direction.

JAMIE DUNNE
Tutor in constitutional and administrative law
University of Edinburgh

Selling art

Your article about an artist selling in a descending bid, or Dutch auction, was intriguing ("Going Dutch", December 17th). The method is worth reconsidering for art sales. Some artists have risked selling new work this way without following the time-honoured art-market validation process of commissioner, dealer, collector and so on. In 17th-century Haarlem, paintings were auctioned by both the descending (or Dutch) and ascending (or English) methods.

As you said, both systems have their merits and demerits. Other than the competitive element favouring the English method, the system can be gamed by fraudulent (shill) bidding and collusive (ring) bidding to raise or lower prices for advantage, which are both illegal but difficult to prove. Reserve prices introduced in the late 1960s helped eliminate collusion, though puffing-up prices undoubtedly occurs. Officially, the main auctioneers offer guarantees and loans to sellers and buyers, also pushing up prices for the most expensive art.

Evidence suggests that Dutch auctions are better for selling large amounts of uniform products, such as flowers. More comparison is required between prices and auction efficiency in the two systems. So far, a few studies for collectables sold using both methods reveal similar prices, in one case favouring the Dutch system.

JAMES GOODWIN
Arts Research
Ipswich

Pardon my English

As Johnson noted (December 3rd), translation is a fraught business. Mark Twain's "The Celebrated Jumping Frog of Calaveras County" was his first great success, but a French journal criticised the story for being humourless. Twain called the French translation "an odious mixture of bad grammar and delirium tremens". He responded by publishing "The Jumping Frog: In English, Then In French, Then Clawed Back Into A Civilised Language Once More by Patient, Unremunerated Toil".

Here's an example of his literal back translation. Original: "'Well,' he says, 'I don't see no p'ints about that frog that's any better than any other frog.'" Back translation: "Eh bien, I no saw not that that frog has nothing of better than each frog." Twain later said about the French language, "They always tangle up everything to that degree that when you start into a sentence you never know whether you are going to come out alive or not."

MARGARET DUPONT
Charleston, South Carolina

Musing on bad translations brought to mind an experience at a restaurant in France. One of the items on the English menu was "Suffocated Duck". I envisioned a gruesome end for the poor bird and wondered how the method of its death enhanced the recipe, until it was pointed out that the French version, *étouffée*, meant smothered in sauce.

BARBARA JAMES
Rochester, New York

I once asked Google to translate "We will manage peace" into Russian. The back translation was perhaps not surprising: "We will rule the world."

MIK BICKIS
Saskatoon, Canada

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The satellites that saved Ukraine

The small dishes that link Ukrainian troops to Elon Musk's low-flying satellites have made a big difference. The world's armies are taking note

IT IS ONE of the wonders of the world—or, more accurately, off the world. The Starlink constellation currently consists of 3,335 active satellites; roughly half of all working satellites are Starlinks. In the past six months new satellites have been added at a rate of more than 20 a week, on average. SpaceX, the company which created Starlink, is offering it as a way of providing off-grid high-bandwidth internet access to consumers in 45 countries. A million or so have become subscribers.

And a huge part of the traffic flowing through the system currently comes from Ukraine. Starlink has become an integral part of the country's military and civil response to Russia's invasion. Envisaged as a celestial side-hustle that might help pay for the Mars missions dear to the founder of SpaceX, Elon Musk, it is not just allowing Ukraine to fight back; it is shaping how it does so, revealing the military potential of near-ubiquitous communications. "It's a really new and interesting change," says John Plumb, America's assistant secretary of defence for space policy.

Appropriately enough, the story started with a tweet, one sent by Mykhailo Fedorov, Ukraine's minister of digital transformation, two days after the invasion:

> @elonmusk, while you try to colonize Mars—Russia try to occupy Ukraine! While your rockets successfully land from space—Russian rockets attack Ukrainian civil people! We ask you to provide Ukraine with Starlink stations and to address sane Russians to stand.

Mr Musk replied to him within hours, saying that the Starlink service had been turned on over Ukraine and that the hardware would follow. Within days lorries full of the pizza-sized flat dishes used to access the satellites began to arrive in Ukraine.

By May around 150,000 people were using the system every day. The government quickly grew to rely on it for various communication needs, including, on occasion, the transmission of the nightly broadcast by Volodymyr Zelensky, Ukraine's president. Because the dishes (some of which are round and some rectangular) and their associated terminals are easily portable and can be rigged to run off a car battery, they are ideal for use in a country where the electricity and communication networks are regularly pounded by Russian missiles. When Kherson was liberated in November Starlink allowed phone and internet services to resume within days.

Crucially, Starlink has become the linchpin of what military types call C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance). Armies have long relied on satellite links for such things. An hour before Russia launched its attack, its hackers sought to disable thousands of modems associated with the terminals which provide access to the main satellite used by Ukraine's army and government, among many other clients. But the capabilities Russia sought to degrade in that pre-emptive strike were far less advanced than the capabilities Ukraine enjoys today.

Starlink does not just provide Ukraine's military leaders with a modicum of connectivity. The rank and file are swimming in it. This is because of the singular capacities of the Starlink system. Most satellite communications make use of big satellites which orbit up at 36,000km. Perched at ▸▸

such a height a satellite seems to sit still in the sky, and that vantage allows it to serve users spread across very large areas. But even if such a satellite is big, the amount of bandwidth it can allocate to each user is often quite limited.

The orbits used by Starlink's much smaller satellites are far lower: around 550km. This means that the time between a given satellite rising above the horizon and setting again is just minutes. To make sure coverage is continuous thus requires a great many satellites, which is a hassle. But because each satellite is serving only a small area the bandwidth per user can be high. And the system's latency—the time taken for signals to get up to a satellite and back down to Earth—is much lower than for high-flying satellites. High latencies can prevent software from working as it should, says Iain Muirhead, a space researcher at the University of Manchester. With software, rather than just voice links, increasingly used for tasks like controlling artillery fire, avoiding glitches caused by high latency is a big advantage.

Seeker to shooter

Franz-Stefan Gady, of the International Institute for Strategic Studies, a think-tank, recently visited the Ukrainian front lines and saw an example of what cheap, ubiquitous connectivity makes possible: a sort of Uber for howitzers. Ukrainian soldiers upload images of potential targets via a mobile network enabled by Starlink. These are sent to an encrypted group chat full of artillery-battery commanders. Those commanders then decide whether to shell the target and, if so, from where. It is much quicker than the means used to co-ordinate fire used up until now.

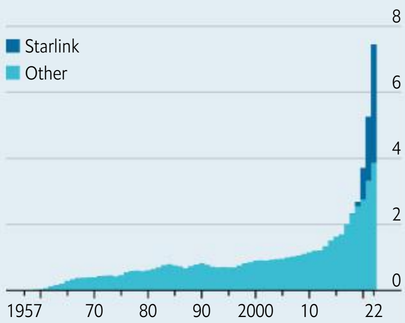
The system also makes drone warfare much easier. In September a Ukrainian naval drone washed up in Sevastopol, the Crimean headquarters of Russia's Black Sea Fleet with what looked like a Starlink terminal attached to its stern. In late October seven similar drones were used to mount a successful attack on the port. Ukraine published a video of the attack shot from the boat's bow. "Ukrainian military operations are hugely dependent on having access to the internet," says Mr Gady, "so Starlink is a most critical capability." A Ukrainian soldier puts it more starkly. "Starlink is our oxygen," he says. Were it to disappear "Our army would collapse into chaos."

This kind of connectivity is something no previous army has enjoyed. Western armies fighting in Afghanistan and Iraq had access to some vast flows of data. For the most part, though (with special forces being the notable exceptions) they found it very hard to get that information to where it was needed in a timely manner.

One former member of the British armed forces recounts an operation he conducted a decade ago to find some explosives. While he flew to the site where they were thought to be, a surveillance drone showed them being moved elsewhere. Brigade headquarters, which could see the drone's feed, passed on the intelligence to his company command over a satellite channel by voice. The company command then relayed the news to his helicopter by high-frequency radio. Each hop added time and confusion. In today's Ukraine, he notes, he could simply have accessed the live drone feed himself.

A murmuration of Starlinks 1

Global active satellites, '000



Source: Jonathan McDowell, Planet 4589

Such frustrations led the Pentagon to start talking of "Joint All-Domain Command and Control" (JADC2, for those keeping score at home), an approach which would allow information from more or less any drone, plane or soldier to be easily sent to whatever missile, gun or aircraft might be best placed to use it. If that sounds familiar, it should. "What we are seeing with Starlink is where the US wants to be in terms of connectivity," says Thomas Withington, an expert on battlefield communications. Developing such a capability within the military-industrial complex has been slow; the bureaucracy has proved predictably resistant. Now it seems all but available off the shelf.

This would be of only theoretical interest if Starlink, conceived as a civilian service, were an easy target in times of war. So far it has not been. Russia's armed forces have lots of electronic-warfare equipment that can locate, jam or spoof radio emissions. But the Starlink signals are strong compared with those from higher flying satellites, which makes jamming them harder. And the way that the dishes use sophisticated electronics to create narrow, tightly focused beams that follow satellites through the sky like invisible searchlights provides further resistance to interference. "Unless you can get a really good bead on where that beam is coming from, it's very hard to get a jamming signal into the receiver," says Mr Withington.

If its signals cannot be jammed, the system itself could be attacked instead. In September the Russian delegation to a UN working group on space security hinted that, despite its status as a nominally civilian system, Starlink might be considered a legitimate military target under international humanitarian law—which is probably a fair assessment. In May researchers affiliated with the Chinese People's Liberation Army published a paper calling for the development of "countermeasures" that could be used against Starlink.

Cyber-attacks like the one aimed at Ukraine's legacy satellite system on February 24th are one possibility. So far, though, similar sallies against Starlink appear to have been ineffective, in part thanks to SpaceX's ability to quickly update the system's software. Dave Tremper, director of electronic warfare for the Office of the Secretary of Defence, has said the speed of the software response he witnessed to one attack was "eye-watering".

Physical attacks are also possible. Starlink satellites relay signals they receive to fairly nearby "ground stations". They in turn send the data on to the internet or back up to another satellite, depending on where the intended recipient is. They thus represent a vulnerability. But with ground stations which handle the traffic to and from Ukraine on NATO soil, a physical attack would be a severe escalation.

And then there are the satellites themselves. America, China, India and Russia have missiles that can shoot satellites out of the sky. Again, though, using them would seem a severe escalation. It would also be a lot less useful against a constellation like Starlink than against older systems. Knocking out a single Starlink would achieve more or less nothing. If you want to damage the space-based bit of the system, you need to get rid of lots of them.

Scorched orbits

One possibility would be to try to trigger a chain reaction in which the debris from one target goes on to destroy secondary targets, debris from which spreads the destruction yet farther in a sort of scorched-orbit strategy. Such a wholesale attack on a global commons would be a desperate measure. Experts contacted by *The Economist* were also unconvinced that it would be of military benefit. For one thing, debris clouds would start out mostly confined to particular orbits, and expand only gradually. "It's not obvious to me that, even if you deliberately set out to create as much debris as possible, that you could deny the use of Starlink on a timescale that was relevant to a war," says Jonathan McDowell, an astrophysicist at Harvard who keeps a census of objects in orbit

For another, if debris is tracked, smart satellites can dodge it. Debris created by an irresponsible Russian missile test in November 2021 came within 10km of a Star-

link satellite some 6,000 times, according to COMSPOC, a firm which monitors satellites and debris. But no harm has been done, partly because Starlink satellites can tweak their orbits to reduce the risks from incoming debris. They did so 7,000 times in the six months from December 2021.

And when satellites are small and mass-produced, as the Starlink ones are, they can be replaced with much less fuss than would previously have been the case. Brian Weeden of the Secure World Foundation, an NGO, reckons that Starlink's use in Ukraine marks "the beginning of the end" for the value of anti-satellite missiles. "[It] turns out they're only useful if your adversary relies on small numbers of really large/expensive satellites."

A good indicator that adversaries do not see Starlink as fatally vulnerable is that they are scrambling to develop similar things themselves. In 2020 China filed documents with the International Telecommunication Union, a UN body, for a 13,000-satellite constellation of its own. Russia has ambitions for a 264-satellite constellation designed to operate in higher orbits than Starlink. America's allies are enthusiastic too. In 2020 Britain's government, Bharti, an Indian multinational, and Eutelsat, a satellite operator, rescued OneWeb, a firm which had gone bankrupt building a constellation of Starlink-like satellites. In November 2022 the EU agreed to begin developing its own low-orbit communications system, IRIS2. Starlink also has an American would-be competitor in the form of Kuiper, a planned constellation bankrolled by Jeff Bezos, the founder of Amazon and of Blue Origin, a rocket firm.

But Starlink has a huge advantage: SpaceX's launch capacity. SpaceX has the world's best satellite-launch system, the partially reusable Falcon 9 rocket. That allows it to launch satellites at an unmatchable rate. There were 61 Falcon-9 launches in 2022. The company is talking of getting its Falcon-9 launch rate up to two rockets a week this year, with one a week devoted to Starlink. Each such launch will add another 50 or so satellites.

Starships and enterprise

More is to come. The company is working on a much larger, fully reusable spacecraft called Starship which would be capable of launching some 400 Starlinks at a time, and thus taking the constellation from thousands of satellites to tens of thousands. The long-delayed first attempt to get a Starship out into space and back is expected this year. The programme has seen explosive failures in the past and may well do so in the future; among other things Starships will have to re-enter the atmosphere at much higher speeds than the first stage of a Falcon 9 does. But investors in the company, which is privately held, seem confident. SpaceX raised $2bn in 2022; it is said to be in the process of raising more at a price which values the company at $137bn.

Meanwhile other launch systems are either unavailable, undersized or have yet to get up and running. American rules stop Western companies from buying launch services from China, and since the war began launch contracts with Russia have been cancelled. OneWeb, which relied on Russian launchers for its launches until this year, now uses SpaceX's Falcon 9 and a launcher developed by India.

The United Launch Alliance (ULA), a joint venture between Boeing and Lockheed Martin which is SpaceX's only direct American competitor in the launch market is retiring its current launchers in favour of a new one, the Vulcan Centaur, which has yet to fly. Much the same is going on at Arianespace in Europe. The first flight of the New Glenn launcher being developed by Mr Bezos's Blue Origin is not expected to take place until the end of the year, if then.

This means that Mr Musk currently has a dominant position in both the launch market and satellite-internet operations. This concentration of power provides three causes of concern. Mr Musk is an unaccountable single individual; Mr Musk's other business interests may play a role in his decisions; and Mr Musk is Mr Musk.

In September Ukrainian officials told *The Economist* that Mr Musk had rejected a Ukrainian request to allow Starlink to be used in Crimea, a part of Ukraine which Russia invaded and annexed in 2014, and where Ukraine has conducted numerous raids on ports and air bases. In October Mr Musk polled his followers on Twitter as to whether Ukraine should cede territory to Russia as part of a peace deal, which provoked outrage from the country's leaders. Mr Musk replied by suggesting that SpaceX would stop carrying the costs for Ukraine's use. But he quickly changed course, and relations seem to have settled down since. "I'm super grateful to them for what they're doing for us," says Mr Fedorov, the minister for digital transformation. Still, SpaceX has continued to restrict the use of Starlink in Russian-occupied territory, according to Ukrainian officials, a power that is unusual for a commercial company, to say the least.


Reinforcements ready to deploy

Per bellica ad astra

If service is denied in some places, it can be permitted in others, even if it is unwelcome. Some countries do not want Starlink services making the internet uncontrollable, and so do not allow the company to operate within their borders. But this can be circumvented when ground stations in neighbouring countries are close enough. Starlink services are currently being used by protesters in Iran, says Mr Musk, despite the country not officially allowing the technology in. In future, service will be possible even in places with no convenient ground stations nearby; the next generation of satellites is intended to be able to pass messages between themselves, rather than sending them back down to the nearest ground station, creating a network which could be much more unevenly tethered to the Earth.

But that does not mean countries will be forced to accept Starlink; some will have ways to fight back. Given the importance of its Shanghai gigafactory to the fortunes of Tesla, Mr Musk's car company, for example, it would be something of a surprise to see Starlink being made available to internal opponents of the Chinese state. And could Taiwan, if push came to shove, depend on Starlink in the way that Ukraine has come to? Just conceivably not—which may explain why the island is accelerating efforts to develop its own satellite constellation.

All that said, Mr Musk also has reason to keep on the right side of the government closest to him: America's. And that might make good business sense. SpaceX already gets a lot of money from government contracts—it is NASA's biggest commercial supplier, and launches big satellites for the country's soldiers and spooks.

And for all Starlink's impact in Ukraine, it is not as yet a commercial success. Flat antennae which can scan the skies currently cost more than most customers are willing to pay; the company is subsidising them in the hope that, as the market grows, the costs will fall. But military users of the system can be expected to pay full price, and then some, from day one. In December SpaceX revealed the existence of Starshield, a subsidiary aimed explicitly at serving such customers. It is hard to doubt that the decision to help Ukraine was idealistic. But it could well prove to have been a fortuitous loss-leader, too. ■



Chicago's prospects

Making little plans

CHICAGO

The lessons the Windy City has for America

For a sense of what is thriving in Chicago, it is worth visiting the offices of Hazel Technologies, a firm based in Fulton Market, about a mile west of the city's downtown Loop. Across most of one full floor of a fancy new office building, the usual desks and cubicles have been replaced by a laboratory. Around three dozen scientists use it to design prototypes of packets of chemicals that help keep fruit and vegetables fresh by controlling the creation of ethylene, a gas that induces ripening. On another floor, commercial staff sell the chemicals to clients all over the world. Hazel, founded in 2015 by three PhD students at Northwestern University, in the northern suburbs, has grown in the past few years to over 100 employees. In 2021 it raised $70m in venture financing, and it now works in a dozen countries.

Few Chicagoans have heard of Hazel—even the city's bigwigs are barely aware of it. And yet the West Loop district, where Fulton Market is, is bustling with new firms like this, quietly doing lucrative things. The workers they are hiring are filling up not only offices but also dozens of new apartment buildings. And more are coming. Across the street from Hazel's offices, cranes are already working on turning what is currently a patch of wasteland into yet another shiny tower of glass and steel. Patrick Flynn, the firm's co-founder, says even he is bemused by the pace of change around him. When he was a teenager in Chicago in the late 1990s, this far west of the Loop was an area you would be careful walking in at night at weekends, he says. Nowadays, the neighbourhood is so trendy it even has a branch of Soho House, an expensive London members' club that reliably opens up anywhere in the world seen as hip by management consultants.

And yet this story is not the one you hear in the city's boardrooms. Instead, many people in Chicago think that the city is entering a spiral of decline. "There is a general sense out there that our city is in crisis," said Chris Kempczinski, the CEO of McDonald's, which is based in the city, in September. In June, Ken Griffin, the billionaire founder of Citadel, a hedge fund, moved himself, his money and many of his staff out of the city to Miami. Less than a year before, he had claimed that "Chicago is like Afghanistan on a good day." In the past year, Boeing and Caterpillar have also moved their headquarters in the Chicago region out—to the Washington, DC, area and to Texas, respectively. Even the Chicago Bears, the city's NFL team, are proposing to leave their home at Soldier Field, on the lakefront, to move to the suburbs. As the city prepares for its mayoral and city council elections in February, this sense of doom is infectious. But is it justified?

According to Rob Paral, a demographer at the University of Illinois, Chicago has long had "this neurotic worry about whether it is going to become another rust-belt city". But the growth in the West Loop shows how overdone this is. Between the two censuses of 2010 and 2020, an area Mr Paral calls the "Super Loop", taking in the traditional city centre as well as the neighbourhoods immediately around it, grew in population by 18%. Even more remarkably, the number of housing units grew by 23%. Roughly one in eight Chicagoans now live around the city centre, up from an almost negligible number just a generation ago. According to data from the state of Illinois, ▸▸

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the number of jobs in a roughly analogous "outer business ring" grew by 33% from 2011 to 2020 (though it then fell back sharply in 2021 because of covid).

Look at "Chicagoland" as a whole—not only the city's 2.7m people, but also the other 6m or so in its suburbs—and it is true that the city's performance looks far more middling. As a share of America's total GDP, the region declined from 4.3% to 3.7% between 2001 and 2020. Coastal cities such as New York, San Francisco and Seattle have all grown much faster, as have southern sunbelt cities like Austin and Houston, which is on course to overtake Chicago's population within the next decade. Troublingly, it has even lagged behind a few other midwestern cities, such as Columbus, Ohio, which is now home to 900,000 people, and Indianapolis, Indiana, which is home to 800,000. That is worrying for the region. But when the city proper is growing fast, the chance of it entering a death spiral—as residents leave and taxes cannot cover services, causing more to leave—is low. In fact, the city of Chicago is poaching residents and businesses back from the suburbs. Between the two censuses, the state of Illinois as a whole lost population; Chicago gained it.

A similar dynamic applies to the biggest obsession of politicians and the business world: crime. In absolute terms, Chicago has more murders than any other American city—over 800 in 2021 and 723 in 2022. Other high-profile violent crimes, in particular car-jacking, have soared since the pandemic, generating ugly headlines. Yet crime has soared all over America, and not much more in Chicago than elsewhere. Compared with New York or Los Angeles, Chicago is an appallingly violent place. But the murder rate is still lower than in many other large cities, such as Washington, DC, Indianapolis and Atlanta. Crime ought to concern Chicago's leaders: the human damage done is enormous. But it is harder to argue that it is a threat to the core economic basis of the city. The violence is concentrated in a few of the poorest neighbourhoods, mostly on the South Side and West Side of the city, where a legacy of segregation has left neighbourhoods abandoned. There, it is getting worse. Murder rates in the city's wealthier neighbourhoods, including downtown, are hardly higher than elsewhere in America.


World-class weather

Don't say provincial

What Chicago has, says Aaron Renn of the Manhattan Institute, a right-leaning think-tank, is an identity crisis. "Chicago feels like it deserves to be considered one of the big important global cities," he says. But whereas its culture, museums, restaurants and much else can be considered truly global, its economy is not, quite. Where cities on the coasts have specialised in finance or tech, Chicago is a diversified economy. It has tech: Google is busy renovating a modernist office block, the Thomson Centre, downtown to house over 2,000 workers. It has finance: the Chicago Mercantile Exchange remains a hub of derivatives and commodities trading. It even still has a relatively large manufacturing industry. But no sector dominates, and the city has few top-tier firms headquartered there. Instead of being a truly "global city", its economy tends to reflect America's at large. Its greatest asset, Mr Renn says, is affordability—which means that upper-middle-class professionals can have the sort of affluent urban lifestyles scarcely possible in New York or San Francisco.

And according to Pete Saunders, an urban planner and commentator, that failure to escape its true Americanness is the source of much of the city's angst. "Chicago has tried to climb the heights that most of the coastal cities have but we haven't quite gotten there, and there's a frustration", he says. Half of the city is doing exceptionally well, he says, but the other half is struggling—like cities across the rustbelt—with a legacy of deindustrialisation, segregation and impoverished local government. Whereas a neighbourhood like River North added over 20% to its population in the decade to 2020, Englewood, on the far South Side, lost 20%, most of them black residents. Even though the city overall may not be in a death spiral, in such places it can feel as if it is. In the decade to 2020, Chicago lost 85,000 black residents, more than any other big city except Detroit.

In time, simple mathematics suggests that Chicago's population could grow rather fast. Put brutally, the poorest neighbourhoods such as Englewood do not have many people left to lose. Deindustrialisation can continue only until there is no industry left to lose. By contrast, the growing parts of the city can continue to grow—with far fewer of the NIMBYish constraints that are strangling coastal cities, and without the costs of sprawl now afflicting places like Austin, Texas. As the West Loop shows, when demand is there, there is no shortage of land to build fancy new condos or office blocks. "We have room to grow," says Samir Mayekar, the city's deputy mayor, who argues that even the proliferation of derelict lots ought to be seen as an opportunity, because it means there is always space to build. That is before even accounting for unknowable benefits as climate change worsens, such as access to fresh water, a stable (if miserably cold in winter) climate, and a strong electricity grid, which could make Chicago more attractive in the future than it has been.

The challenge for Chicago is focusing on that longer-run vision, and ensuring that the wealth being created in the city can jump across its old racial barriers to benefit everyone living there. It is an aim that the city's civic leaders, too focused on immediate difficulties, typically fail to articulate. The election in February seems sure to almost entirely skip discussion of a long-term vision, and whoever wins will find the same political constraints that every Chicago mayor has. But in a way that hardly makes the place unique. In fact, it represents the challenge facing all America, in microcosm. ■

NYC's grand plan

Business time

NEW YORK

Can office blocks be converted into places to live?

By 2023, NEW YORK's leaders had hoped, America's biggest city would be as strong as ever, the pandemic's impact as fleeting as clouds over its skyline. If only. As of mid-September only half of Manhattan office workers actually go to work in Manhattan. Spending at restaurants and bars in the city's big business districts is 23% below its pre-pandemic levels. As fewer commuters ride trains, the subway system is cutting its service on Mondays and Fridays. It looks unlikely that New York will return to its old version of normal. The question now is how the city might advance to a better one.

That is the goal set by Eric Adams, New York's Democratic mayor, and Kathy Hochul, the state's Democratic governor. Last month a panel convened by the mayor and governor presented a plan to transform New York City, with 40 initiatives to reinvent three broad areas: business districts,



Rooms without a view

commuting and housing, and to do all this with equity as well growth in mind. Local governments specialise in reports on the future, but this one stands out.

That is in part because Mr Adams and Ms Hochul are collaborating—a seemingly small feat but an unusual one in New York, where prior governors and mayors specialised in enmity. Business leaders also seem to back it; many top executives sat on the panel. And because the report's recommendations are particularly bold.

That is especially evident in the proposals for the city's business districts. Lots of cities are struggling with empty offices as people continue to work at least partly from home. In Manhattan the office vacancy rate is at record high. Many shops, from retailers to dry-cleaners, and restaurants, which rely on office workers for custom, are closed or are struggling.

Rethinking and reimagining business districts as vibrant 24/7 places, with more of a mix of residential and office space, is a key part of the stabilising plan. Among the panel's recommendations is to create tax incentives to encourage landlords to convert offices into residential spaces or to update office space. Less restrictive zoning laws will be needed. Some of the recommendations require legislative changes, which is always complicated.

It will be difficult if not unfeasible to convert many of the larger office buildings into residential use. Nicole Gelinas of the Manhattan Institute, a think-tank, doubts that there will be much converting. "Apartments without windows or apartments without kitchens? I don't think that's a good idea," she says. Dylan Burzinski of Green Street, an analytics firm, says only about 20m square feet (1.8m square metres) can be converted to residential space, which is not a lot compared with Manhattan's 420m square feet office market. A good chunk of the city's office buildings are functionally obsolete and energy inefficient. Tear downs will be necessary—the average building is 75 years old.

Conversion probably would not generate the same tax revenues for the city either. Manhattan's business districts generate 59% of citywide office and retail-property tax revenue. A decrease could eventually affect city services. The future looks bleak. A recent paper co-authored by Stijn Van Nieuwerburgh, "Work from Home and the Office Real Estate Apocalypse", estimates that office valuations will be 39% below 2019 values by 2029. Many companies, such as Meta, are downsizing office space.

Reinvention is part of New York's DNA. Its bustling port gave way to humming factories, which gave way to skyscrapers full of office workers. The panel's co-chair, Dan Doctoroff, when working for former mayor Michael Bloomberg, used the rebuilding of Lower Manhattan after the 2001 attacks as a catalyst to rethink and rezone much of the city. He says "the key thing is execution. We gotta hold elected officials responsible, accountable." Happily, he says, Mr Adams and Ms Hochul are fully behind the plan. With recession looming and companies such as Goldman Sachs announcing layoffs uncertainty abounds. Ironically, says Kathryn Wylde of the Partnership for New York City, this is starting to drive people back to the office. ■

Politics

The chaos Congress

WASHINGTON, DC

Republicans struggle even to elect a speaker of the House

AMERICAN AND British conservatives are distinct species. But in one respect—a cannibalistic impulse to kill and consume their leaders—they are similar. On January 3rd Kevin McCarthy, the Republican congressman who for the better part of a decade has yearned to be elected speaker of the House of Representatives, found himself on the receiving end. Though Republicans secured a narrow majority in midterm elections in November, a contingent of hardline congressmen have banded together to deny their party leader the absolute majority he needs to obtain the speakership.

It is a historically bad start for the new Congress. The last time a vote for speaker failed on its first attempt was a century ago, when Frederick Gillet clinched it after nine rounds of voting. Still, that was not as bad as the drama of 1855, when the House, mired in conflict over slavery, took two months and 133 rounds of voting to pick a speaker. At the time of publication, Mr McCarthy had failed to win on his sixth attempt and the House had adjourned voting until Thursday.

Without a speaker, the House exists in a primordial, inert state: unable to consider legislation or even formally swear in new members until the question is resolved. The spectacle, reminiscent of a papal conclave minus the smoke, is remarkable: a century-old format of political jockeying, revived. The ultimate outcome—the election of a Republican speaker, whether Mr McCarthy or someone else—is not in doubt. But the saga proves that Republicans remain in disarray as they navigate an identity crisis induced by Donald Trump.

Some of this is comeuppance. Absence of principle and naked pursuit of power are unremarkable traits in the halls of Congress, but in Mr McCarthy they are remarkable because of how completely they encapsulate his method of politics. The would-be speaker has gone through serial reinventions during his time in Congress, including after his first serious bid to become speaker failed in 2015. The Freedom Caucus, the farthest-right contingent of Republican representatives, thwarted him then. After that Mr McCarthy began assiduously courting his detractors with gladhanding, backslapping and prodigious fundraising. He coveted the endorsements of Jim Jordan, a hard-charging congressman from Ohio and former arch-antagonist, as well as Marjorie Taylor Greene, a notoriously conspiratorial congresswoman from Georgia.

When the winds shifted, Mr McCarthy took care to do so too. After the attack on the Capitol on January 6th 2021, Mr McCarthy said Mr Trump bore responsibility and told colleagues that the former president ought to resign. Three weeks later he was kowtowing to the kingmaker in Mar-a-Lago, the former president's Florida estate. When Liz Cheney, once the number-three-ranking Republican in the House, became an outspoken critic of Mr Trump's attempts to overturn his election loss, Mr McCarthy endorsed her ejection from the leadership and later campaigned against her re-election.

It is ironic, then, that after all the grovelling of the past few years, Mr McCarthy once again finds himself mistrusted and embarrassed by the Trumpiest contingent of his own party. On the day of the votes for speaker, their contempt was plain. Bob Good, a congressman from Virginia, called him a member of the "uni-party swamp cartel". Scott Perry, a Pennsylvania congressman who was perhaps the most personally involved in efforts to overturn the election results in 2020, said that "in his 14 years in Republican leadership, McCarthy has repeatedly failed to demonstrate any ▸▸



California sixer

desire to meaningfully change the status quo in Washington." Matt Gaetz, an ultra-Trumpy congressman from Florida, called him the "biggest alligator" in the Washington swamp.

The detractors are ostensibly holding out for policy changes. They want any single member to be able to call a vote of no confidence in the speaker, and demand more hawkish fiscal policy. Parse their words, however, and it is clear that their objections are also personal.

In a last-ditch speech to fellow party members ahead of the vote, Mr McCarthy reportedly told them that "I earned this job" and "I am not going to go away". For him, the repeated stalemate is preferable to loss. Mr McCarthy had been reluctant to enter into negotiations with his detractors months ago in the hope that he could simply steamroll them into submission. In the final days before the vote he began to capitulate to their demands—but that had the perverse effect of diminishing whatever respect they had for him and hardening their resolve to deny him the speakership.

It seems that Mr McCarthy committed an error that Niccolo Machiavelli, an Italian political philosopher with many secret students on Capitol Hill, wrote about 500 years ago. Writing in "The Prince", Machiavelli pondered the question of whether one should attempt to rule with love or with fear. "It may be answered that one should wish to be both, but, because it is difficult to unite them in one person, it is much safer to be feared than loved." Lately, Mr McCarthy has attempted to be both, a feat beyond his talents.

Whoever eventually becomes Republican speaker seems set for a hellish experience. The previous two—John Boehner and Paul Ryan—had to battle against hardliners in order to avoid inflicting grievous damage on the country, like defaulting on debt payments or going into government shutdowns. Averting disaster regularly required resorting to help from Democrats in Congress. That enraged the Freedom Caucus types, leading both men to cut short promising political careers. As the drama with Mr McCarthy demonstrates, that patricidal dynamic in the caucus has only worsened. It will make the necessary work of legislating all the more difficult. The chaos Congress is only getting started. ■

Work and pay

Wealth warning

Pay transparency laws do not work as advertised

THE SALARY negotiation has long been one of the trickiest parts of hiring or being hired. Ask for too little and you may leave money on the table; ask for too much and you may not be offered the job at all. In America, this delicate balancing act is becoming less perilous. On January 1st California and Washington became the latest states in the country to require employers to include minimum and maximum pay ranges in all job advertisements. Similar laws aimed at levelling the playing field in salary negotiations and reducing gender and racial pay gaps have been passed in Colorado, New York and a handful of cities. In November New York City began enforcing its own law. Yet despite the popularity of such pay-transparency laws—they now cover roughly a fifth of the American labour force—their effects are still widely misunderstood.

Labour advocates champion pay-transparency laws on the grounds that they will narrow pay disparities. But research suggests that this is achieved not by boosting the wages of lower-paid workers but by curbing the wages of higher-paid ones. A forthcoming paper by economists at the University of Toronto and Princeton University estimates that Canadian salary-disclosure laws implemented between 1996 and 2016 narrowed the gender pay gap of university professors by 20-30%. But there is also evidence that they lower salaries, on average. Another paper by professors at INSEAD, UNC Chapel Hill, Cornell and Columbia University found that a Danish pay-transparency law adopted in 2006 shrank the gender pay gap by 13%, but only because it curbed the wages of male employees. Studies of Britain's gender-pay-gap law, which was implemented in 2018, have reached similar conclusions.

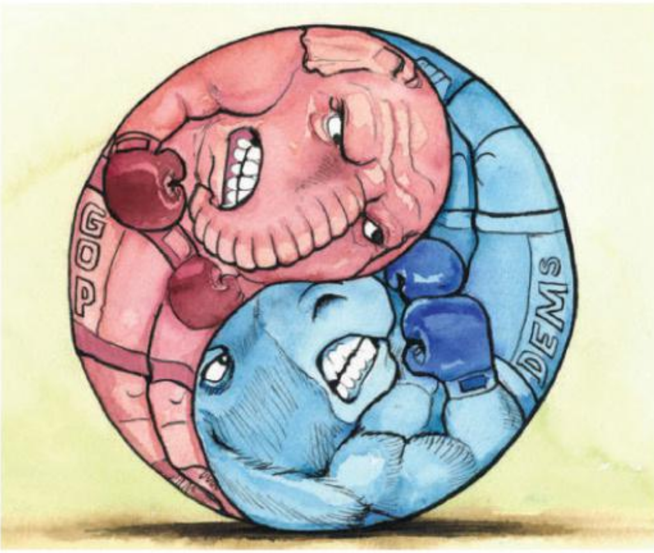
Another misconception about pay-transparency laws is that they strengthen the bargaining power of workers. A recent paper by Zoe Cullen of Harvard Business School and Bobby Pakzad-Hurson of Brown University analysed the effects of 13 state laws passed between 2004 and 2016 that were designed to protect the right of workers to ask about the salaries of their co-workers. The authors found that the laws were associated with a 2% drop in wages, an outcome which the authors attribute to reduced bargaining power. "Although the idea of pay transparency is to give workers the ability to renegotiate away pay discrepancies, it actually shifts the bargaining power from the workers to the employer," says Mr Pakzad-Hurson. "So wages are more equal," explains Ms Cullen, "but they're also lower."

Perhaps the biggest misunderstanding about pay-transparency laws is that they are hard to evade. In New York City, for example, the law applies to nearly every employer—only those with fewer than four employees are exempt. Companies that violate the law can face fines of up to $250,000. But data provided to *The Economist* by Revelio Labs, a workforce intelligence firm, show that just 58% of New York City-based job advertisements published in November and December, the first two months the law was in force, included pay ranges. Some sectors were more law-abiding than others. In information and transport the compliance rate was nearly three-quarters; in the utilities, manufacturing and retail sectors it was under half.

So what is the upside to these new regulations? Ms Cullen of Harvard says that to the extent they inform job applicants about which firms and positions pay more, and which pay less, they may lead to more efficient matching between job-seekers and employers. Though anyone who hasn't worked that out already will be at a disadvantage in any salary negotiation. ■

Lexington | A silenced majority

Why is the country divided so evenly? What might change that?



Titillated if not surprised, America's political obsessives saw some justice in Kevin McCarthy's struggle to amass enough support to become speaker of the House of Representatives. Mr McCarthy has evaded the encumbrance of principle for so long that, to at least some politicians, it seemed fitting that conservatives would torture him by withholding a few votes, all but making faces while dangling the job just beyond his reach.

The torment of Mr McCarthy is easy to explain. But it points to a mystery, one this column will outline but—with apologies—not solve: why is it that each party's grip on power, once attained, has become so fragile? Everyone knows America is polarised. Yet that does not explain why it is also so evenly divided.

With the exception of three previous, brief periods of national fickleness, one party or the other held clear majority control throughout American history. The present partisan equilibrium has lasted 40 years, since Ronald Reagan broke the Democrats' New Deal coalition. No president since his predecessor, Jimmy Carter, has kept unified control of Congress past a midterm.

There are few swing states, swing districts or swing voters left, yet the government swings constantly because the balance is so fine. "There's nothing like our current era as you look back through US history," says Frances Lee of Princeton University, who studies Congress. "I'm mystified fundamentally by it, to be honest. How do we have all these constituencies that are safe for one party or the other, yet somehow it adds up to 50-50 nationally?"

Each election seems to sharpen the knife's edge upon which American governance teeters. The slim Republican House majority is owed to 6,670 votes out of 107m cast, according to "Inside Elections", a nonpartisan publication. Elections have become so unpredictable, and policymaking so volatile, because profound outcomes result from slight shifts: a change of less than 1% of votes would have switched control of the White House in 2016 and 2020, and of the Senate in 2020.

Democrats say the game is stacked against them. No Republican has won the popular vote for president since 2004, they note, and Democratic senators, who tend to represent more populous states, can command millions more votes in aggregate. But the rules have also benefited Democrats: in 2022 Republicans did better nationally than their seat tally suggests because they "wasted" votes in safe districts. And, even conceding Republicans get a boost because thinly settled states also get two Senate seats, that goes back to the original question: why does that boost happen to result in an almost perfect split? Why has it not yielded four more safe seats for Republicans, or four fewer? Neither party has held a Senate majority for more than eight years since 1980, a span without precedent, the *Atlantic*'s Ronald Brownstein has noted.

Even profound changes in what it means to be a Democrat or Republican seem to return the parties to their equilibrium, as though obeying some thermostat. Donald Trump is no George W. Bush, but Mr Trump eked out a comparable electoral-college win.

Polarisation has hardened partisan identities, which helps explain why Republicans stuck with Mr Trump. But that does not explain why the hefty demographic, economic and technological change between those two presidencies did not tilt the balance. In this century Democrats lost ground in the countryside and gained it in the cities, Republicans squandered support in the Silent Generation and acquired it among Millennials, Democrats alienated white voters without college degrees and Republicans alienated white voters with them—and that all netted out, roughly, to parity.

It is hard to overstate how the Reagan revolution transformed politics. Here is an index: the then House Republican leader, John Rhodes, stepped down after the 1980 election in shock that his party had funded a challenger to the Democratic speaker. "There's no way I'd be against Tip O'Neill," he said. "I love him." Those are not words a Democratic leader will say of Mr McCarthy.

Reagan took not just the White House but broke Democrats' grip on the Senate for the first time since 1954, making Republicans believe they could win the House. Though they would not accomplish that for 14 years, this sense of possibility led to what Ms Lee calls "insecure majorities", in her book of that name. What now seem like intrinsic practices date to the competition that began in 1980. Regular caucus meetings to plot partisan strategy, legions of communications aides, "message" bills that are intended to fail: these new tools were meant to heighten confrontation, undermine bipartisanship and sabotage the majority. They worked.

Going berserk

Maybe four decades of sharper "messaging" have split the electorate. What seems more probable, though, is that it has consolidated partisans, while leaving those voters who are less inflamed by posturing unconvinced that there is much difference between the parties. Barack Obama failed to end Mr Bush's wars or rescind his tax cuts; Mr Trump failed to end Mr Obama's health-care plan; Joe Biden has not touched Mr Trump's big legislative achievement, his tax cuts, while continuing Mr Trump's China policy and delivering on a central promise he broke, investing in infrastructure.

Now, as the Republican House squares off with Mr Biden within the arena of the 2024 campaign, its official agenda seems ill-suited to supply the black-or-white contrast that might break the impasse. If two impeachments of Mr Trump could not transform the underlying political dynamic, investigations of Mr Biden have little chance of doing it. The same is true of Republican assurances of being tougher on China or creating more manufacturing jobs.

All bets are off, however, if the Republican berserker caucus that tormented Mr McCarthy succeeds in commandeering the party. If Republicans try to cut entitlements and impose a national ban on abortion, they could open a path for the Democrats back to a durable majority. ■



Brazil

Big plans, not much money

BRASÍLIA

Luiz Inácio Lula da Silva has to deal with a fiscal crunch and a fickle Congress

On January 1st Luiz Inácio Lula da Silva looked out from the ramp at Planalto Palace, the Brazilian president's office, at a sea of supporters dressed in red. The crowd resembled the one that greeted him at his first inauguration in 2003. Brazil's fortunes have risen and fallen since then. So have those of Lula, as the former union organiser and founder of the left-wing Workers' Party (PT) is known. He left office in 2010 with an 83% approval rating. From 2018 he spent 19 months in jail on corruption charges that were later annulled. In October 2022 he completed a remarkable political comeback by beating Jair Bolsonaro, the right-wing populist incumbent, in a bitterly fought presidential election.

Now he must govern. In fact, he has spent the past two months acting as if he were already president. That is partly because Mr Bolsonaro spent the transition sulking. He never explicitly conceded defeat in an election he suggested, without evidence, would be rigged against him; and his party tried unsuccessfully to have the result overturned. In December, while most Brazilians were watching the World Cup, hundreds of *bolsonarista* protesters stood outside the army headquarters in Brasília, the capital, calling for a coup. Mr Bolsonaro decided he would rather be abroad, in Florida, on inauguration day. The presidential sash, which is supposed to be passed from one president to the next, was given to Lula by a group representing Brazilian society, including a ten-year-old boy and an indigenous chief.

Lula has a daunting task ahead because of the economic mess which Mr Bolsonaro bequeaths his successor. Copious pre-election stimulus spending helped boost growth in 2022; according to the central bank, it will be 2.9%. But it is expected to drop to 1% in 2023. Inflation has fallen from a peak of 12% in April to 6% in November. However, the share of Brazilians who do not get enough to eat has risen from 6%, just before Mr Bolsonaro took office in 2019, to 16%. His government promised liberal economic reforms but, apart from putting state pensions on a sounder footing, failed to enact most of them.

Inflation has helped reduce the burden of government debt, by swelling the size of national income. But high inflation has also pushed up the government's borrowing costs and eroded confidence in long-run macroeconomic stability, leaving the new government with less room to manoeuvre in dealing with the debt burden, which, at 75% of GDP, remains uncomfortably high (see chart on next page).

The resulting fiscal crunch will complicate Lula's ambitious policy plans and the speed with which he hopes to enact them. "It's not fair or right to ask for patience from someone who is hungry," Lula said, through tears, in his inauguration speech. He wants to revamp various social policies started under his previous administration. These include a conditional cash-transfer scheme known as Bolsa Família (Family Fund), a subsidised-housing initiative, and a programme to provide jobs and upgrade Brazil's shoddy infrastructure.

Lula also plans to reduce illegal deforestation in the Amazon. The pace of tree-clearing rose by 60% under Mr Bolsonaro, as officials turned a blind eye to illegal logging, mining and land-grabbing. Among Lula's first decrees upon taking office were ones to restructure environmental bodies gutted by his predecessor, reverse a plan to legalise wildcat mining in protected areas and reactivate the Amazon Fund, by which ▸▸

Norway and Germany help pay for environmental policing and sustainable-development projects. The new environment minister is Marina Silva, who did the job between 2003 and 2008 and is expected to launch the kind of co-ordinated enforcement effort that helped Brazil curb deforestation in the 2000s. Yet the ministry's budget is roughly a quarter of what it was when Lula left office in 2010, when adjusted for inflation.

Lula has had to scramble to fill a hole in the budget for 2023 of the order of 1.7% of GDP, caused by Mr Bolsonaro's pre-election profligacy. Left unfilled, it would have forced him to slash spending on health, education and cash transfers which keep 22m of the country's poorest families afloat. The president-elect spent much of the transition period rallying support in Congress for a constitutional amendment to exclude roughly that amount from a federal spending cap passed in the wake of a fiscal crisis and a recession in 2014-16, during the tenure of Lula's hand-picked successor, Dilma Rousseff. The cap limits any increase in government spending to the previous year's inflation rate.

Give and take

Lula's amendment passed on December 21st, the eve of the congressional recess. Having to change the constitution in order to make a budget add up is a symptom of Brazil's political dysfunction. The charter has been changed 140 times since it was drafted in 1988, usually to allow the government to borrow more, rather than to allow reforms that might increase the efficiency of spending.

That Lula has had to deal with all this before taking office is "not normal", said Marcelo Castro, the senator overseeing the budget bill. Still, Lula's methods—haggling with the leaders of more than 20 parties and doling out cabinet jobs to those who agree to back him—show his awareness that the first step towards achieving his ambitious plans is to establish a stable relationship with Congress.

This has not been easy, despite Lula's reputation as a skilled negotiator. The PT has just 12% of seats in Congress. As is typical in Brazil's legislature, a majority coalition must be built via *toma lá, dá cá* ("give and take"), the grubby process of making deals with opportunistic centre-right parties and giving them positions of power. One PT senator throws up his hands in exasperation at the "exaggerated" number of ministries each party demanded in return for backing the government. Lula has created 14 new ministries, including a fishing ministry, bringing the total to 37.

Congress has also become more powerful since Lula stepped down in 2010. Although Mr Bolsonaro initially eschewed *toma lá, dá cá*, he later took the practice to an extreme, giving decision-making power over tens of billions of reais of the federal budget to Arthur Lira, the president of the lower house, in exchange for shielding the president from impeachment. Mr Lira funnelled the cash to his political allies in the states for vote-winning projects such as paving roads and buying tractors.

During the campaign Lula decried this "secret budget", which the Supreme Court says is unconstitutional. It sucks money away from ministries and creates opportunities for graft. Once elected, however, Lula changed his tune, allowing the "secret budget" to be turned into two separate transfers controlled by congressmen. He also started negotiating with Mr Lira. That surprised many, given the congressional leader's loyalty to Mr Bolsonaro. But Mr Lira, like Lula, is a pragmatist. He quickly recognised Lula's victory; other *bolsonarista* politicians followed suit.

Indeed many politicians who once supported Mr Bolsonaro have now decided to back Lula. "Being opposition to the government when it's going well is like being opposition to the country," says Luciano Bivar, the president of União Brasil, one of the parties that will give Lula a majority in Congress. Even some members of Mr Bolsonaro's Liberal Party may vote with the government. "The party has some influence over its members, but the government is much more powerful," says Sóstenes Cavalcante, one of its deputies.

Even so, Simone Tebet, a senator who campaigned for Lula in the run-off and who is now his planning-and-budget minister, predicts that congressional goodwill will not extend to every issue. Lawmakers are eager to back Lula's efforts to boost growth, for example, but many will not champion leftist social causes. Conservative types may attempt to override several decrees passed by Lula upon taking office, including a ban on the purchase of certain kinds of guns and a temporary suspension of the opening of new shooting clubs.

Same, but different
Brazil



Sources: Central Bank of Brazil; IMF; INPE; World Bank

And the broad coalition that Lula has built will be unstable. Brazilian presidents' strength in Congress depends on their popularity, which in turn depends on the economy. Neri Geller, the vice-president of the agricultural caucus in Congress, predicts that infrastructure projects such as improved roads and ports and subsidised credit lines from BNDES, the state development bank, may endear Lula to farmers, who tend to be *bolsonaristas*. But Brazil's fiscal situation and the prospects for the global economy are more difficult than when Lula was last president, during a commodity boom.

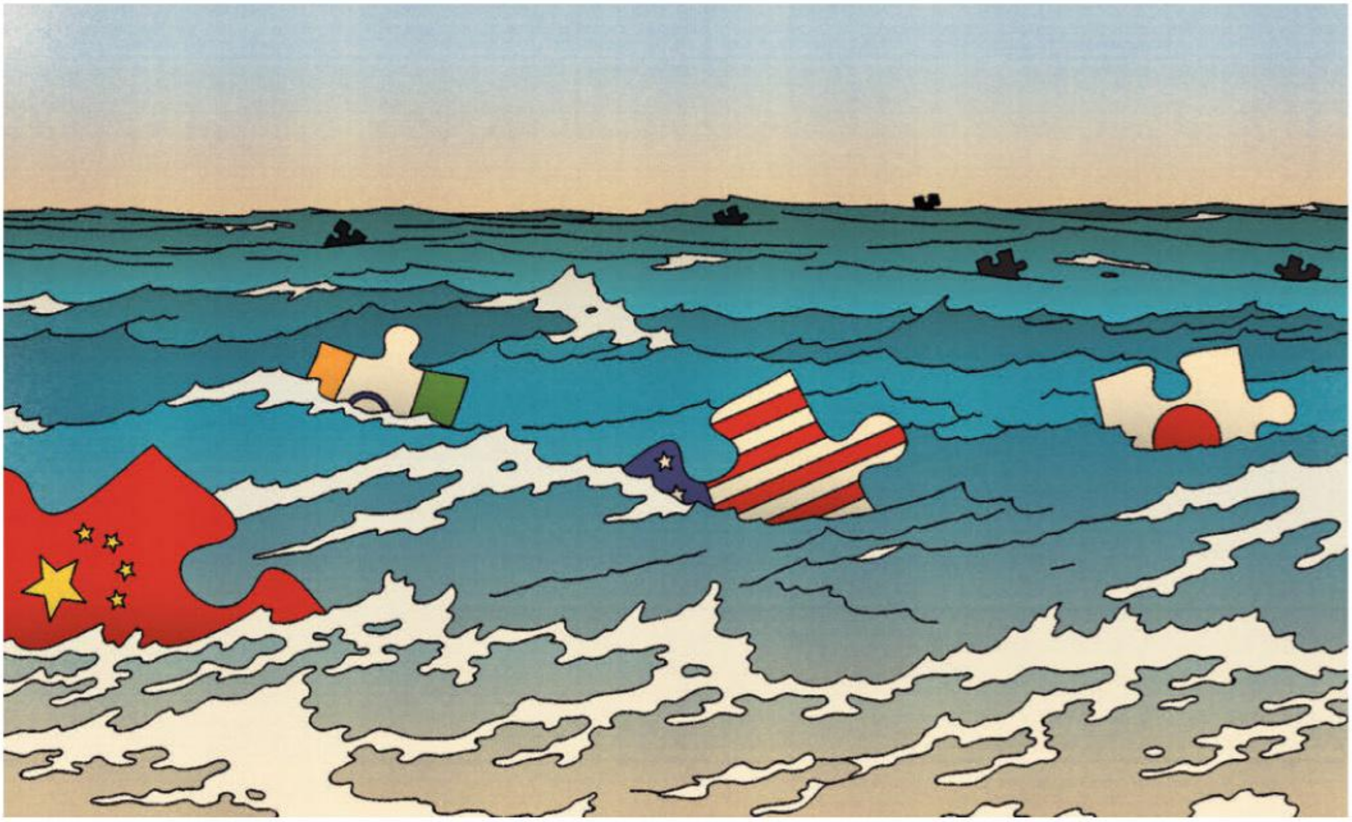
Fernando Haddad, Lula's finance minister, has promised to deliver a new fiscal rule to replace the spending cap, which will allow the government to borrow more (while establishing new rules for fiscal responsibility in an attempt to calm market jitters). He also wants to implement a tax reform to boost growth, even though this has eluded governments for decades. An initial reform would simplify a byzantine tax code, for example by combining several levies into a single value-added tax. Mr Haddad has said that the government might later try to make taxes more progressive, for example by taxing inheritance.

Man of the momentum

Faster growth than Brazil's lacklustre 0.5% annual average of the past decade is crucial to fund the social programmes that Lula is planning. But many fear that the PT's left-wing interventionist streak will stifle it. The financial markets will be "far less forgiving" with Lula than they were with Mr Bolsonaro, says Aline Contar de Souza of Ágora, a consultancy. Brazil's currency lost ground after Mr Haddad was nominated, though it later rebounded. The share price of Petrobras, the state oil giant, fell by 6% the day after the inauguration because of Lula's decision to continue fuel subsidies launched by Mr Bolsonaro, and to revoke preliminary studies into the privatisation of eight state companies.

Lula can kickstart parts of his economic agenda through executive orders and decrees. He could launch employment programmes and expand lending by BNDES, which the PT hopes will spur consumption and boost growth. But big reforms will require buy-in from Congress.

In Brazil, as elsewhere, a buoyant economy boosts politicians' support for the government. During crises, the opposite tends to happen, making difficult reforms all but impossible. "We're betting a lot on Lula's political skill," says Humberto Costa, a PT senator. The new president will have to prove himself quickly. ■



Asian geopolitics

Reinventing the Indo-Pacific

SINGAPORE, TOKYO AND WASHINGTON, DC

A new super-region is taking shape—mainly to counter Chinese aggression

UNTIL A FEW years ago, the term "Indo-Pacific" was hardly uttered in international affairs. Now many countries have adopted so-called Indo-Pacific strategies, including America, Australia, Britain, France, India, Indonesia, Japan, the Philippines and even Mongolia. South Korea joined the pack in December. The main Asian holdout is China, which scorns the phrase. That is key to understanding what the Indo-Pacific is all about.

Outside geopolitics, the term, implying a conjoined perspective on the Indian Ocean and the even vaster Pacific, is not new. Its first recorded use was by a British colonial lawyer and ethnographer in the mid-19th century. Patterns of human trade and exchange had already spanned the two oceans for millennia, with Islam spreading eastward from the Middle East and Hinduism and Buddhism fanning outwards from India. In more recent decades scientists have grasped how the circulation and biogeography of the two oceans are closely connected. The great story of Asia can be usefully framed by the two-ocean notion of an Indo-Pacific.

Yet for strategists, alternative frameworks such as the "East Asian hemisphere", "Pacific Basin" or "Asia-Pacific" were until recently more compelling. The Asia-Pacific Economic Co-operation, or APEC, a late-20th-century initiative of 21 states, was intended to unite the economic dynamism of the Pacific Rim, including especially East Asia. What need for a new geographical descriptor? For this newspaper, it has been enough simply to define everywhere from Afghanistan to the top of Japan, and from the Maldives to New Zealand, simply as "Asia".

The answer is that in statecraft, as Rory Medcalf of the Australian National University argues in his elegant book on the rise of the Indo-Pacific concept, mental maps matter. These not only define a country's "natural" region, Mr Medcalf writes. They signify national priorities, which in turn shape "the decisions of leaders, the destiny of nations, strategy itself."

Crucial to understanding the new Indo-Pacific map is that it connects the economic powerhouse of East Asia to the newer dynamism of South Asia, including along the sea lanes by which most of the world's trade and ship-bound energy pass. Equally important, the Indo-Pacific concept is underpinned by the main challenge to this engine of Asian prosperity: China's destabilising behaviour as its military, economic and diplomatic power increase, not only in its backyard of East and South Asia, but across the Indian Ocean to east Africa and down into the South Pacific.

China's rise has long been a given. But the countries embracing the new Indo-Pacific nomenclature, most of them more or less democratic, have grown increasingly concerned about China's coercive tendencies. Australia is a victim of Chinese economic boycotts and insidious political-influence campaigns. Sri Lanka has seen its sovereignty eroded by indebtedness to China under the infrastructure-led Belt and Road Initiative. Huge Chinese fishing fleets encroach on the territorial waters of states in Asia and beyond. China's growing ▸▸

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fortification of the South China Sea unnerves South-East Asians. Both Japan and India have faced Chinese aggression at their frontiers. Chinese military threats towards Taiwan unsettle not only that self-governing island but the whole region.

China's "wolf warrior" diplomacy reflects the nationalist grievances its president, Xi Jinping, is stoking at home. Thus, the Indo-Pacific defines not only a space. It represents perhaps the greatest geopolitical challenge: how to respond to Chinese aggression without, as Mr Medcalf puts it, resorting to "capitulation or conflict".

That challenge has been sharpened by periodic concerns about the capacity and staying power of the United States, the pre-eminent power in the region since the second world war. It was Japan, America's principal ally in Asia, that first divined the importance of engaging traditionally aloof India, a move that helped crystallise the Indo-Pacific concept. During Abe Shinzo's first term, from 2006 to 2007, the then Japanese prime minister "clearly saw that the old notion of the Asia-Pacific failed to embrace India," says Taniguchi Tomohiko, the late leader's speechwriter. Abe thrilled India's MPs with an address to the Indian parliament entitled "Confluence of the Two Seas", a phrase borrowed from a book by an early Mughal prince. Kanehara Nobukatsu, a former diplomat and architect of Japan's Indo-Pacific policy, says they were "like kids: applauding, banging the table, stamping the floor."

When Abe returned to power in 2012, the risks attending China's rise were clearer. So was the growing importance of India. "To make a counterbalance [to China], the only option is India," says Mr Kanehara. Abe therefore reprised an earlier idea of a security dialogue between America, Australia, India and Japan, leading to the revival of that dormant "Quad". And at an African summit in 2016 he proposed the notion of a "a free and open Indo-Pacific" (FOIP).

Since then Chinese border incursions in the Himalayas have tilted India, once insistent that it would not be part of an anti-China bloc, towards the Western camp. It is now a more engaged member of the Quad, not only militarily but also, for instance, offering to work with the other members to get covid-19 vaccines to the region. India has warmly embraced the FOIP principle. Still, drawing proud, cautious India deep into a Western network of security alliances is going to require a long courtship—assuming it is possible.

None of the advocates of FOIP countenances cutting economic ties with China. Even so, China, not altogether illogically, sees FOIP as a ploy to contain it. The Indo-Pacific idea has plenty of critics in the West, too. Some consider it a mere front for geopolitical agendas, starting with America's Manichean battle with China; President Joe Biden's administration is a major fan of FOIP. Others argue that the concept is so capacious and vague as to be incoherent. Nick Bisley of La Trobe University in Melbourne calls the Quad, whose vaccine initiative quickly ran into problems, "strategic policy by press release".

Above all, there are glaring gaps on the Indo-Pacific's eastern and western flanks. For all the hard power America and India bring to the region, they are largely absent from regional economic initiatives.

Missed opportunity, missing links

Under President Donald Trump, America backed out of the Trans-Pacific Partnership, a free-trade pact which Japan and Australia then helped to salvage as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. Mr Biden's Indo-Pacific Economic Framework may nod to the region's new nomenclature, but offers none of the market access its members want. "For Asians, the American market is the biggest pie to eat," Mr Kanehara says. Despite years of negotiations and lobbying from Abe, India opted not to join the Regional Comprehensive Economic Partnership, another jumbo trade agreement now dominated by China. For Japan, that decision brought "a great sense of disappointment", says Mr Taniguchi.

Even Michael Green, a former American official now at the University of Sydney and a fan of the Indo-Pacific, compares the framework to "a big piece of IKEA furniture, held together by little dowels". Mr Kanehara describes FOIP as primarily a "networking concept". Most non-defence regional initiatives, with the exception of Japanese infrastructure investment, are small beer. Indian technical assistance and South Korean projects promoting women's empowerment are notably modest. Nonetheless, as Mr Green argues, through all the Indo-Pacific activity a common theme is emerging: smaller states "cannot be bribed or forced into a Chinese sphere of hegemony and influence".

The most salient, and best-developed, Indo-Pacific dimension concerns security. It is based on America's network of bilateral alliances, overlaid with ad hoc arrangements such as the Quad and the AUKUS defence technology pact of 2021, a deal between America, Britain and Australia to supply Australia with nuclear-powered submarines and develop other military technology. There are also triangular efforts such as those among America, Japan and South Korea. But there is no Indo-Pacific NATO in the making, with mutual defence or joint planning, and little clarity about who would do what in a crisis. As for Taiwan, an Indo-Pacific focal point, it is nearly absent from regional strategising.

Just as "minilaterals" still count for something, so too does co-operation among smaller Asian states. For instance, though the former president of the Philippines, Rodrigo Duterte, succumbed to bullying and threats and tilted towards China, his successor, Ferdinand "Bongbong" Marcos, has adopted a less yielding stance. It includes increased military co-operation with America. The Philippines is also procuring cruise missiles from India, patrol boats from South Korea and air defences from Israel. Taiwan's policy of countering Chinese coercion includes not just military upgrades from America but also thickening ties with its Asian neighbours.

Major challenges, Mr Kanehara contends, lie ahead in convincing more countries that committing to an Indo-Pacific idea is better than falling under China's sway. Many dislike taking instruction from former colonial powers. One big Asian country, Indonesia, with a low-powered approach to foreign affairs, has yet to signal clearly how it intends to wield its influence in an Indo-Pacific context. It does not want to rock any boats with China.

Such reluctance may be one reason why China's outgoing foreign minister, Wang Yi, once scornfully predicted that talk of a free and open Indo-Pacific "will dissipate like ocean foam." Maybe. Yet the likeliest thing to prove him wrong is China's own relentlessly provocative behaviour. ■



Fijian politics

Cloud coup-coup land

SUVA AND WELLINGTON

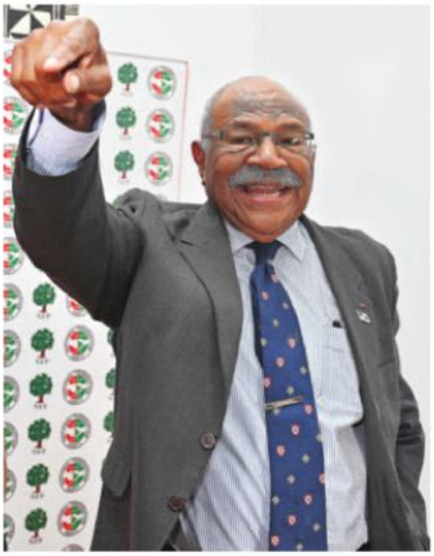
A historic transfer of power in the South Pacific

On Christmas eve the small Pacific-island state of Fiji witnessed an opposition leader being sworn in as prime minister for only the third time in its history. The previous two such prime ministers were both ousted in coups, in 1987 and 2000. As Sitiveni Rabuka—a 74-year-old political veteran and himself a former coupster—took the oath of office, the country's meddlesome armed forces nonetheless promised to abide by the election result and uphold the country's constitution. But will they keep that vow?

Mr Rabuka emerged as the victor of the election held on December 14th by the narrowest of margins. The FijiFirst party of the outgoing prime minister, Frank Bainimarama (another former coupster), won the most seats, with 26 of the 55 contested. Mr Rabuka's People's Alliance party secured only 21. But Mr Bainimarama, who ruled Fiji for 16 years, failed to secure a majority. Mr Rabuka was able to form a governing coalition with two smaller parties, the National Federation Party and SODELPA, which together won eight seats. Mr Bainimarama conceded defeat, then flew off to Australia, where his son is facing domestic-assault charges. Yet by New Year's Day the former prime minister was back and appeared to have had second thoughts.

Mr Bainimarama called on several senior officials, including the powerful police commissioner, to refuse the new government's demand that they resign. Having nominated his chief henchman and former finance minister, Aiyaz Sayed-Khaiyum, to represent the opposition on the important Constitutional Offices Commission, Mr Bainimarama then rescinded that nomination on January 4th. Mr Sayed-Khaiyum, who was considered the de facto prime minister under FijiFirst rule and had left the country on Christmas Day, has since been put on a police border alert.

Even if Mr Bainimarama restrains himself, there may be political trouble ahead. The constitution that the army has sworn to uphold was imposed on Fiji's 900,000 people by Mr Bainimarama after he seized power and abrogated the previous version. Much of the incoming government's platform, including reforms to the country's anti-corruption commission and the restoration of the Great Council of Chiefs, might require amendments to it. Yet constitutional change would require the support of 75% of voters in a referendum, an almost impossible threshold. And the armed forces are deeply attached to the current constitution because it confers upon them responsibility for the "well-being" of the Fijian people.



Rabuka's ready to rumble

Politics aside, Mr Rabuka inherits an economy stricken by covid-19. It shrank by more than a fifth over the course of 2020 and 2021, before somewhat rebounding last year when tourists began returning. During the pandemic the FijiFirst government had to bail out the national carrier, Fiji Airways. And the war in Ukraine has since made the public finances even worse, by raising the price of energy and of many basic foodstuffs, which Fiji imports. The national debt now stands at 85% of GDP; around a third of annual revenue is dedicated to servicing it.

Geopolitics represents another challenge for Mr Rabuka. In recent years Fiji has seen considerable investment from China. A Chinese company owns the country's gold mine; another mines bauxite on its second-largest island. Chinese concessional loans have paid for new roads and bridges. Fearful of being squeezed out, Australia and New Zealand have rushed to provide hefty budget support, covid relief, rural electrification and a new peacekeeping centre for the armed forces.

Yet the most pressing risk is of another coup. In the uncertain aftermath of the election, the police commissioner called in the armed forces, citing a risk of ethnic unrest. Their commander, Major-General Jone Kalouniwai, obliged, but with only a token deployment. Yet many think Mr Bainimarama is intent on goading him to intervene more forcefully—on the pretext that Mr Rabuka is already violating the constitution. The former prime minister will need to be managed carefully if Fiji is to witness its first-ever enduring democratic transfer of power. ■

India's delayed census

An area of darkness

DELHI

A country without self-knowledge cannot be well-governed

Three years ago India's government was scheduled to pose its citizens a long list of basic but important questions. How many people live in your house? What is it made of? Do you have a toilet? A car? An internet connection? The answers would refresh data from the country's previous census in 2011, which, given India's rapid development, were wildly out of date. Because of India's covid-19 lockdown, however, the questions were never asked.

Almost three years later, and though India has officially left the pandemic behind, there has been no attempt to reschedule the decennial census. It may not happen until after parliamentary elections in 2024, or at all. Opposition politicians and development experts smell a rat.

Narendra Modi often overstates his achievements. For example, the Hindu-nationalist prime minister's claim that all Indian villages have been electrified on his watch glosses over the definition: only public buildings and 10% of households need a connection for the village to count as such. And three years after Mr Modi declared India "open-defecation free", millions of villagers are still purging al fresco. An absence of up-to-date census information makes it harder to check such inflated claims. It is also a disaster for the vast array of policymaking reliant on solid population and development data.

India's first proper census was conducted in 1881 by British colonial administrators, who calculated that finding out more about their subjects would help them consolidate power. Independent India continued to hold one every decade. Census data are used to determine who gets food aid, how much is paid to schools and hospitals across the country, and how constituency boundaries are drawn. They also form the basis for more detailed, representative-sample surveys on household consumption, a key measure of poverty, and on social attitudes and access to health care, education and technology.

For a while policymakers can tide themselves over with estimates, but eventually these need to be corrected with accurate numbers. "Right now we're relying on data from the 2011 census, but we know our results will be off by a lot because things have changed so much since then," says Pronab Sen, a former chairman of the National Statistical Commission who works on the household-consumption survey. ▸▸

And bad data lead to bad policy. A study in 2020 estimated that some 100m people may have missed out on food aid to which they were entitled because the distribution system uses decade-old numbers.

Similarly, it is important to know how many children live in an area before building schools and hiring teachers. The educational misfiring caused by the absence of such knowledge is particularly acute in fast-growing cities such as Delhi or Bangalore, says Narayanan Unni, who is advising the government on the census. "We basically don't know how many people live in these places now, so proper planning for public services is really hard."

The home ministry, which is in charge of the census, continues to blame its postponement on the pandemic, most recently in response to a parliamentary question on December 13th. It said the delay would continue "until further orders", giving no time-frame for a resumption of data-gathering. Many statisticians and social scientists are mystified by this explanation: it is over a year since India resumed holding elections and other big political events.

True, the census process requires training some 3m "enumerators" to go door to door with the questionnaires, and the government's ambition to register the answers digitally for the first time may make the task more complex. Teachers, who usually do much of this work, have only just returned to schools. The window for conducting the census is short, as the monsoon makes much of the country difficult to get around for much of the year. Yet such logistical hurdles never stopped previous administrators undertaking the census. Mr Modi should explain why his government appears unable to follow their lead. ■

Banyan Be careful what you wish for

Pakistan and China are finding they have little leverage with the Taliban

When America beat a sudden, ignominious retreat from Afghanistan and the Taliban surged to power, there was much cheering in next-door Pakistan. In China, America's withdrawal was considered a great propaganda coup.

Naturally, many like to see one in the eye for the overweening Americans. But the Pakistanis, in particular, had much more than that at stake in the Taliban's triumph. The Islamist movement was part-created by Pakistan's powerful military spies in the 1990s and had ever since been harboured by them.

Grooming the Taliban had a logic to Pakistani generals but not to outsiders—including the successive American administrations covering the generals' bills. The Pakistanis wanted to control Afghanistan through the Taliban, to gain vital "strategic depth" in the event of a conflict with India. That might involve providing the generals with territory to retreat to or, more important, merely denying India a foothold in Afghanistan by which to encircle them.

Yet how fleeting that dream has proved. Pakistan has no more control of Afghanistan than any of the other foreign powers it has sent packing. The Taliban's victory has also electrified hardliners in Pakistan, who have redoubled calls for sharia. Worse, it has emboldened Pakistan's own militants, the Tehreek-e Taliban Pakistan (TTP). In the year following the Taliban's return to power, terrorist attacks in Pakistan jumped by half.

TTP fighters are, like the Afghan Taliban, mostly ethnic Pashtuns, whose traditional lands are on both sides of the shared border. After attacks on Pakistani soil, Pakistan's defence minister complained on January 2nd, they melt across the frontier to Afghanistan to regroup. The irony hardly needs stressing: rather than furnishing Pakistan with strategic depth against India, Afghanistan gives the TTP depth against Pakistan. After Pakistan's interior minister threatened strikes against TTP bases in Afghanistan, a Taliban official tweeted a grainy image from 1971 of Pakistan surrendering to India after losing East Pakistan. Ouch.

The disputed border, the "Durand line" drawn by the British in 1893, is another point of contention. Taliban and Pakistani forces have clashed there—six Pakistani civilians were killed by Afghan shelling in December. Pakistan is putting up barbed-wire fences along the border, and the Taliban are pulling them down.

The indignities mount. Pakistan imagined it would be managing its client's interactions with the outside world, as it did during the group's previous spell in power. But the Taliban have direct dealings with others, even America, and receive Indian aid. The American departure has if anything turned out to be even more galling, by massively reducing Pakistan's relevance and sway in Washington.

As for China, it was under fewer illusions that America's withdrawal would be a serious boon. But as Andrew Small of the US German Marshall Fund, a think-tank in Washington, argues, Chinese policymakers at least hoped the Taliban would go through the motions of seeking diplomatic recognition and normalising relations with others.



Taliban triumphalism has put paid to that. Being an international villain, if not quite a pariah, does not seem to vex the group's leaders. After banning girls from high school and women from universities, the clerics recently banned women from working for NGOs. The International Rescue Committee, a big international NGO, promptly suspended operations.

China, unlike most other countries, has stayed put. Though it does not recognise the Taliban, its embassy is one of a handful still operating in Kabul. Mr Small suggests that, in a country once again providing inspiration to regional militants, China hopes to persuade the Taliban to restrict the activities of Uyghur militants—whose suppressed homeland in China's western region of Xinjiang is just across the border.

But the major Chinese investment once promised to Afghanistan is off the cards. Though the Taliban have learned to speak development cant, security in Afghanistan remains abysmal. In December gunmen launched a deadly attack on a Kabul hotel where Chinese business types congregate. China will not risk being dragged into the Afghan mire as was America (which even now provides far more aid than China does). Mr Small predicts that China will minimise the scope of its activities, leaving as much as possible to its friends in Pakistan's security establishment. They, after all, are responsible for so much of the tragic state of Afghanistan.



Covid-19

The tsunami

DEZHOU

China's medical system is overwhelmed by covid patients. Yet an even bigger wave may be coming

Outside the People's Hospital of Dezhou, a small city in the coastal province of Shandong, an old woman on a stretcher, breathing quickly with her eyes closed, is unloaded from an ambulance. A few minutes later she is put back into it. Her family members start calling other hospitals. There is no room at this one.

In the lobby, another family refuses to give up. "There are no beds at the moment, but let's wait a bit," says Mr Teng, who prefers that only his surname be used. He is trying to secure space for his father-in-law, who fell sick in late December and now has dangerously low levels of blood oxygen. The patient is sitting in a wheelchair, breathing through a mask attached to his own portable oxygen-concentrator, which is plugged into a wall socket.

A while later nurses find a spot for the Teng family, squeezed in between other wheelchairs and beds. All are filled with elderly patients, who are hooked up to drips and breathing from oxygen tanks. Most of them are infected with covid-19, says a nurse. New critically ill patients arrive every day. "Beds are in short supply everywhere at the moment," she says. "None of us has had any rest. We're working all the time." Relatives are enlisted to push trolley beds and remove used bedpans.

Similar scenes are common across China. Since December, when the country ended the lockdowns, mass testing and domestic-travel curbs of its "zero-covid" policy, the virus has spread at a blistering pace. Many young and middle-aged people have already shaken off a bout of the disease. But Chinese hospitals are now full of people whom the virus is hitting harder. Most of them are elderly, or have pre-existing conditions such as heart disease and diabetes. They are often in a perilous state: many are under-vaccinated, if they have been jabbed at all.

Coyly, the government calls its U-turn on covid an "optimisation of prevention and control measures". On social media, some commenters are more forthright. They describe the upsurge of the disease as a *haixiao*, or tsunami. By one estimate, 37m Chinese people are catching the virus daily. The country has experienced no outbreak on anything like this scale since the pandemic began three years ago.

→ Also in this section
30 Chaguan: Will the party pay a price?

When the zero-covid strategy was scrapped last month, the virus was proving hard to contain without imposing endless, crippling lockdowns; its now-dominant form, Omicron, is more infectious than earlier variants. As controls were lifted, cases surged in big cities. Beijing, Shanghai, Chongqing and Guangzhou have already passed their first peak of infections, according to experts in Shanghai at Ruijin Hospital and Shanghai Public Health Clinical Centre. About 70% of Shanghai's population may have been infected, the vice-president of Ruijin Hospital reckons. State media have quoted a senior epidemiologist as saying that in Beijing the proportion is probably higher than 80%.

Such cities are better prepared for the virus than small ones. They have more trained doctors, nurses, intensive-care units (ICUs) and better supplies of drugs. Beijing, for instance, said in late December that it was giving out Paxlovid, an American antiviral that helps prevent severe sickness, to community health centres, even though the medicine is in short supply nationwide. Such drugs sell for thousands of dollars on the black market. Even basic cough medicine has become a rare and desperately sought commodity. The capital has the advantage of being in the ▸▸

political limelight. In recent weeks medical teams from several provinces have been sent to Beijing, drawing them away from the areas that will need them more.

The outbreak is now spreading to smaller cities like Dezhou, which have fewer medical resources, and rural areas, which will struggle even more. Many doctors in the countryside have never treated covid patients before. Reports speak of queues forming outside village clinics, where many medical workers are also infected and drugs are lacking. On December 31st the government released a plan for tackling infections in the countryside. Many of its proposals, such as stockpiling drugs and increasing ICU capacity, will be hard to implement before the virus arrives.

It is hard to estimate the death toll. Official statistics are useless. According to them, there have been fewer than 5,300 covid deaths during the pandemic, most of them at the beginning. In the seven days before this story was published, only 13 people had died of covid, according to the official tally. The World Health Organisation has asked China to release more real-time data on hospitalisations and deaths (see Science & technology section). Some Chinese citizens are demanding more information, too. "What's the death rate? What's the rate of severe illness?" asked one person on Weibo, a Chinese social-media platform. "Don't make ordinary people face this battering without protection!"

Peak China

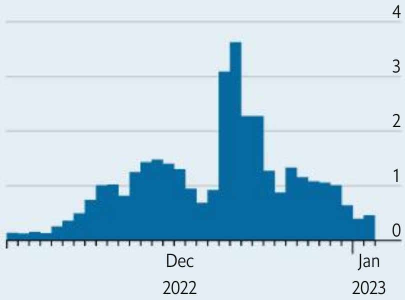
The Chinese Centre for Disease Control and Prevention has said that it will eventually release an estimate of excess mortality, which should indicate how many more people are dying compared with the average rate. Airfinity, a London-based data firm, estimates that around 9,000 people are probably dying of covid in China every day. It predicts the number may peak late this month at about 25,000, and that another—higher—peak of infections will occur in early March. *The Economist*'s model predicts that in a worst-case scenario 1.5m Chinese people will die from the virus in the coming months.

Demand for cremations is surging. Police in Shanghai say they have caught over 20 "funeral scalpers", who are being paid to help people jump the queue for services. One funeral operator in Dezhou estimates that deaths have increased by 20-30% since covid restrictions were dropped. "It's been crazy," he says. Things were safer when the government was controlling covid, he adds. "But you can't have restrictions for ever. And if you open, this is the course of events you have to experience."

China's government insists that it was right to drop covid controls when it did. On December 29th Chen Wenqing, the country's domestic-security chief, said that in

Shots down 1

China, covid-19 vaccine doses administered, m



Sources: National Health Commission; Chinese Centre for Disease Control and Prevention

the past three years the country's strategy for controlling the epidemic had been "scientifically effective and completely correct". Since the new approach was adopted, President Xi Jinping has not directly talked about the stress on hospitals or covid deaths. In a year-end speech, he merely acknowledged that "tough challenges remain", and called for "perseverance".

State media have been more forthcoming about pressures on medical facilities, but have emphasised the heroism of medical workers rather than the system's many weaknesses. During a New Year's Eve programme by Hunan province's television network, photos of exhausted nurses and doctors were projected behind a stage as a singer belted out inspiring lyrics: "From darkness to dawn, no matter how hard, setbacks can only make me stronger!"

State media also shy away from discussing whether China could have been better prepared for the lifting of covid-related restrictions, which happened just as the winter flu season was getting under way. By late November only 40% of those aged over 80 had received the three shots of vaccine required to protect them from severe disease or death. By December 21st the average number of doses being administered daily had risen to more than 3.6m compared with fewer than 140,000 at the beginning of the month (see chart 1).

Since then, however, the campaign appears to have slowed again, with administered doses dropping below half a million per day by the start of January. Local media suggest possible reasons: workers assigned to deliver shots are getting infected, while others are being diverted to help treat the sick. It remains the case that only Chinese vaccines are permitted. Foreign ones, some of which are more effective than China's, are still banned.

The next challenge facing China's doctors and nurses will be the Chinese New Year, the first day of which falls on January 22nd. Celebrations surrounding it involve the biggest family get-togethers of the year: millions will leave China's big cities and travel back to towns and villages where many people are elderly, immunisation rates are lower than in cities and natural immunity barely exists.

A B-list virus

At least one county (in Hunan province) has urged people not to return for the holiday "unless necessary". The central government, however, is showing no sign of wavering. In contrast to its stance during the zero-covid phase, it has not tried to deter people from heading to their home towns. On January 8th it will begin managing covid as a "class B" disease, like HIV and hepatitis, rather than "class A", which includes bubonic plague and cholera. This will involve abandoning the biggest remaining legacy of the zero-covid era: stringent quarantine requirements and pandemic-related visa restrictions that have made it extremely difficult for most foreigners to enter the country for nearly three years. The change will also apply to quarantine requirements for crossing the border between mainland China and Hong Kong.

Several countries, including America, Britain, India and Japan, have announced coronavirus-testing requirements for visitors from China. Morocco has shut its doors to them entirely. China says these measures are unscientific and politically motivated. It is true that testing all arrivals from China is not very useful. That said, Chinese official indignation is complicated by rules requiring negative covid tests from all travellers into China. Covid-related spats threaten once again to bedevil China's fraught relations with the West.

But trips abroad are likely to increase rapidly. For much of the past three years people in China have been deterred from travelling overseas by the difficulty of returning, and by Chinese officials' efforts to dissuade them from leaving the country except for essential purposes. On January 8th the police are due to resume issuing passports to outbound tourists. Members of a cosmopolitan class of young, wealthy ▸▸

Another covid contraction 2

China, manufacturing purchasing-managers' index*



*Based on a survey of purchasing executives. A reading above/below 50 indicates manufacturing is generally expanding/contracting compared with the previous month
Source: Caixin

Chinese, long starved of opportunity for international travel, may seize the chance. (Travel sites report a big increase in searches.) The great reconnecting of China with the outside world is perhaps the final major step needed before the post-pandemic era can truly be said to have started (see Finance & economics section).

In China, the transition back to normal life is already proving difficult. There is a sense of euphoria that restrictions are being lifted. But fear remains. Central shopping districts in many big cities appear empty during the day. Over the three-day public holiday around January 1st, the number of domestic trips was barely higher than a year earlier, and less than 45% of the pre-pandemic figure. At cinemas, box-office sales were down by nearly 46% (even though the biggest draw, Hollywood's "Avatar: The Way of Water", has been highly rated by Chinese viewers).

But nightlife has picked up as the threat of quarantine disappears. Images of packed bars and crowds of new-year revellers in cities across the country have circulated on Chinese social media. It is possible that many of China's young people will try to party through the worst of the exit wave, even as hospitals fill up.

While the disease spreads, it will be hard to keep production lines running and lorries on the road. Covid is already ripping through factory towns and causing serious disruption. Local governments and company managers are battling high infection rates on factory floors. In late December suppliers in major exporting provinces such as Guangdong, Zhejiang, Shandong and Jiangsu faced severe delays, according to *Caixin*, a Chinese magazine. Many home-appliance makers, for example, were operating at 20-50% capacity, the publication said. Its purchasing managers' index, a gauge of the manufacturing sector, suggests a contraction in activity (see chart 2 on previous page).

Factory bosses are weathering the storm as best they can. Mr He (who also prefers to give just his surname) runs four plants with a combined 600 workers in the provinces of Guangdong and Sichuan, where he makes paper packaging for high-end alcohol and cigarettes. By December 19th more than 50% of his workers in Sichuan had fallen ill, forcing him to shut his plants for four days. The factories in Guangdong fared better: just half the production lines were closed for a few days at the end of December. Mr He's operations are now getting back to normal. He has even resumed business travel and is meeting clients for drinks.

Another worry is that workers could be forced to quit to take care of elderly family members living far from the factories. As China proceeds with its flash exit from zero-covid, manufacturing hubs could experience some short-term shocks to labour supply, as workers head home earlier than expected for their Chinese New Year break. They may also delay their return.

Local-government intervention may also pose a risk to business. Some executives worry that, as cases surge, officials may begin to seal off their towns. Even within towns, traffic from one district to another might be restricted. That would interrupt the connectivity that makes Chinese cities so efficient for manufacturers.

Predicting how long such disruptions may last is difficult. The stunning collapse of the zero-covid policy means the route to economic recovery will be bumpier but quicker than many originally expected. Analysts have been bringing forward their projections of when the corner will be turned. Many economists think that the worst will be over by late March. At that point a recovery will begin that could gain strength later in the year.

New propaganda needed

An economic rebound would be seized on by the Communist Party to shore up battered faith at home in its propaganda line, which in zero-covid days emphasised Western "chaos" in the face of the pandemic compared with China's "order". Officials must worry as they assess the cacophony that is erupting on Chinese social media about the current outbreak. Explicit criticism of the government is muted (as always, censorship helps to crush it). But the torrent of praise that zero-covid once elicited, at least until 2022, when many people began to balk at the growing number of lockdowns, has not been replaced with similar applause for the about-face.

Even among the government's most ardent online cheerleaders, hints emerge of surprise at the way the country's exit from zero-covid is playing out. "The tsunami of infections caused by Omicron in Beijing has surpassed expectations," wrote Hu Xijin, a nationalist former newspaper editor, on his Weibo account on December 25th. Concerning the covid-related deaths of old people he told his nearly 25m followers: "This kind of price causes people sorrow." Another Chinese journalist, with nearly 1.9m followers, called the relaxation of covid controls "chaotic" and "ill prepared". On December 29th a neo-Maoist website, Utopia, published a commentary accusing the government of ditching its strategy too swiftly. "We're not a racing car, but a big bus full of old, weak, ill and handicapped people," it said. "A smooth and steady transition is extremely important." The article has been deleted.

On Weibo, many commenters have been turning on people they call *tang fei*, or lying-flat bandits. The term refers to sceptics of the zero-covid policy, who are accused by pro-party types of wanting to lie down and accept the spread of the disease. Those who joined demonstrations against zero-covid measures that took place in several cities in late November are said to belong to the bandit group. The central government clearly is nervous that it might be deemed a member, too. Searches for the term *tang fei* were already being blocked by social media in November, before the government made fully clear that it was ditching its covid policy. To evade the censors, users now use homonyms.

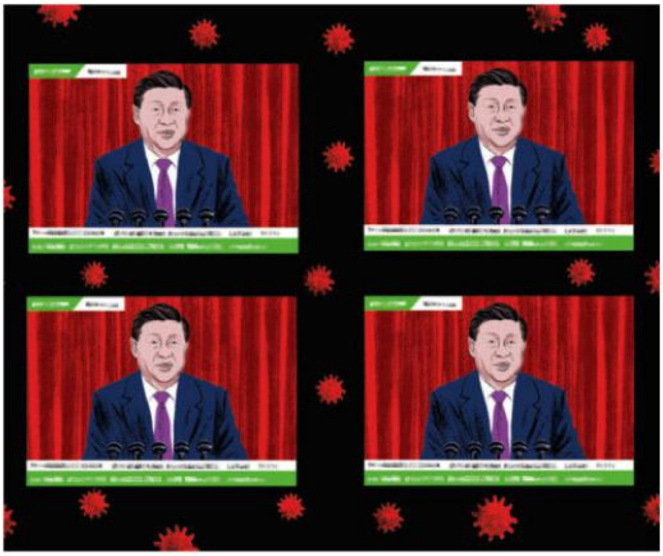
A few stick their necks out. "You're so good at talking rubbish with your eyes wide open," said a Weibo user in Guangdong province with more than 320,000 followers. He was referring to an official spokesman's claim that the state had prepared for the change in policy. "You're always just thinking of putting gold on your face. Aren't you just treating the common people like idiots?" The censors have scrubbed that one. They will have a lot more work to do in the months ahead. ■



This isn't normal

Chaguan | Avoiding a zero-covid reckoning

Like Chairman Mao, Xi Jinping seems to believe that China's rise trumps individual suffering



Across China, families are enduring avoidable misery and heartbreak, as loved ones succumb to a deadly—and predictable—wave of covid-19 infections for which their rulers failed to prepare. Some overseas analysts talk of a turning-point. They wonder if today's policy disarray, which follows on the heels of anti-lockdown protests in late 2022, signals a crisis of legitimacy for President Xi Jinping and the Communist Party.

This is a grim moment for China's people. For all the claims that infections have peaked in big cities like Beijing, there will, tragically, be more deaths when the virus finds older folk now sheltering at home, or living in rural villages. A shameful number of those deaths will be preventable. Yet it is possible that Mr Xi will pay no visible price for pandemic horrors on his watch.

Many outsiders were taken aback by the Chinese public's broad tolerance of zero-covid controls, notably in the first two years of the pandemic. Even the months-long lockdown of nearly 25m people in Shanghai, in the spring of 2022, was shrugged off by many other Chinese. Zero-covid was, in essence, a giant utilitarian experiment. In a huge country with a weak health system, its harsh, often arbitrary controls did save lives. Most of the time, in most of China, life was relatively normal. The suffering of unfortunates living in closed cities or hauled off to quarantine camps was not much discussed or (owing to censors) widely known.

The best explanation for zero-covid's unplanned end involves a similar weighing of numbers. A dangerously broad cross-section of the public grew sick of controls that no longer worked, as the virulence of the Omicron variant disrupted life and wrecked the economy in too many places, and oases of normality shrank. Protests offered proof of this exhaustion. But in truth authorities were losing control of covid before demonstrators hit the streets.

The party's information monopoly helps it conceal how it wasted 2022, failing to raise vaccination rates or prepare hospitals. No opposition or free press exists to challenge the National Health Commission's sudden claim, in the *People's Daily* of January 3rd, that the country has 12.8 intensive-care beds per 100,000 people, though the same commission said in November that there were fewer than four such beds per 100,000. China calls two home-grown covid shots "full vaccination"; most Chinese do not know that a World Health Organisation boss last month called that dose "just not adequate", especially for the over-60s.

Nationalism continues to generate bad policy. On January 3rd China's foreign ministry rejected an offer by the European Union to donate advanced vaccines, tweaked to tackle Omicron. A spokesperson snapped that Chinese vaccine supplies are "ample". A day earlier, China's embassy in Paris challenged the notion that imported mRNA vaccines are more effective than China's shots (though they are and would save lives if used). Rehashing an anti-vaxxer talking-point, the embassy scorned Pfizer's boss for catching covid, twice, after receiving his own company's vaccines. Actually, nobody claims that mRNA shots prevent mild infections.

The party has worked to portray outsiders seeking transparency as hostile and ill intentioned. While verifying reports of covid deaths far in excess of official statistics, an *Economist* colleague was scolded this week by a worker near a Beijing crematorium. With sincere anger, the man called death a private matter and, using a stock propaganda phrase, told the foreigner to "go report something involving positive energy".

Public opinion is not monolithic. Online, cheerleading state-media reports about heroic doctors and nurses co-exist with widespread public cynicism about official pandemic statistics, for instance, and incredulity when many pharmacies and clinics recently ran out of even basic fever-reducing medicines.

Still, most urban Chinese under 40 have known life only in a country growing more prosperous and stronger, and that is a unifying experience. The party is tireless in harnessing such pride. Some months ago, the China Media Project at the University of Hong Kong, an invaluable propaganda-studies centre, spotted a revealing official commentary defending zero-covid. Reposted online by leading party media, it revived a long-forgotten argument advanced by Chairman Mao Zedong in 1953. Impatient with party elders fretting about high taxes levied on peasants to pay for China's intervention in the Korean war, Mao dismissed the *xiao renzheng*, or small benevolence, of worrying about immediate concerns like taxes, next to the *da renzheng*, or great benevolence, of giving the masses a motherland that stood up to American imperialists. The commentary called the sacrifices of zero-covid an example of great benevolence in the people's long-term interests.

An autocrat's definition of benevolence

Mr Xi appears to subscribe to the same logic. In a year-end televised address, he nodded to "tough challenges" ahead in a new phase of covid-management, before pivoting to the glories of living in a rising China, hailing everything from the Beijing Winter Olympics of 2022 to the launching of new spacecraft and warships. He then praised early Communist Party revolutionaries for enduring hardships, and noted that one of his favourite phrases is: "Just as polishing makes jade finer, adversity makes one stronger."

Mr Xi's insouciance about suffering in a great cause is chilling, for the same logic might be used to justify any autocrat's cruellest whim. It is also a bet that China's national rise, his core claim to legitimacy, will continue. Expect the party to trumpet that the country is swiftly returning to economic growth as covid controls vanish, and to censor and demonise all those exposing its blunders. Already officials offer hollow boasts about new covid policies that "put the people first and put life first", while busily hiding needless deaths. Mr Xi may yet face hard-to-see costs when it comes to public trust in his rule. But if the party retains absolute power after memories of covid fade, that is a bargain it will take. ■



Israel and the Gulf

Nothing's gonna stop us now

DUBAI

Israel's radical new government will test the country's ties with Arab states

IN HIS PAST work as a lawyer, Itamar Ben-Gvir (pictured) represented Israeli Jews accused of hate crimes against Palestinians. He heads a party that promotes Jewish supremacy between the Jordan river and the Mediterranean. Yet on December 1st he was invited to celebrate the national day of the United Arab Emirates (UAE) at a hotel in Tel Aviv.

One month later the UAE had to denounce its guest. On January 3rd Mr Ben-Gvir, by then Israel's national-security minister, went to the Temple Mount, Jerusalem's most volatile flashpoint, since it is the Jews' holiest spot but also sits beside the al-Aqsa mosque, sacred to Muslims. Arab states decried his visit. The UAE called it a "serious and provocative violation".

Binyamin Netanyahu's new government is the most right-wing in Israel's history. Many Israelis fear what it means for their democracy. Palestinians expect it will wreck their few remaining hopes for an independent state. And yet a cabinet stocked with ultra-nationalists and far-right radicals may still not unravel the developing ties between Israel and the Arab world.

For decades, it would have been met with a torrent of Arab condemnation. Until 2020 Israel had official ties with just two Arab states, Egypt and Jordan.

Then came the Abraham accords, which in 2020 saw Israel agree to establish formal relations with Bahrain, Morocco, Sudan and the UAE (see map on next page). Many Israelis, especially on the right, saw this as a sign that the Palestinian cause had lost its salience. Arab governments, in the UAE in particular, argued that this new relationship would give them influence in Israel, a way to soften its worst policies.

Mr Netanyahu's new government offers a chance to test these competing theories. Along with Mr Ben-Gvir, it includes the likes of Bezalel Smotrich, the finance minister, who once called for segregating Jews and Arabs in maternity wards lest his wife be forced to give birth next to an "enemy".

If the personalities are radical, so are the policies. Mr Netanyahu wants to expand Jewish settlements in the occupied West Bank. He is the first Israeli leader to promise his coalition partners that he will work towards annexing the West Bank, the heart of a future Palestinian state.

So far, however, few Arab leaders seem eager to push back, at least in public. The rulers of Egypt and the UAE called to congratulate Mr Netanyahu after he was sworn in. Bahrain's foreign minister said Israel's prime minister "firmly believes in peace". Mr Netanyahu hopes his first foreign trip will be to Abu Dhabi, the UAE's capital.

Many Arabs still support the Palestinian cause: witness the displays of solidarity at the World Cup in Qatar. A poll by the Washington Institute for Near East Policy, a pro-Israeli think-tank, found that just 25% of Emiratis and 20% of Bahrainis now approve of the Abraham accords, down from 47% and 45% in 2020.

But views have also shifted in other ways. Israel, says one Saudi businessman, offers a strategic partnership against Iran and investment opportunities in everything from agriculture to tech. "What do ▸▸

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the Palestinians give us? Headaches."

Maybe so. But Mr Ben-Gvir's early-morning visit to the Temple Mount was a reminder that Israel can induce those, too. A visit there in 2000 by Ariel Sharon, then the Israeli opposition leader, helped spark a furious Palestinian *intifada* (uprising).

Such incidents may erode public enthusiasm for the Abraham accords. Mr Netanyahu's planned trip to Abu Dhabi has been postponed. His office cites logistics; it may have more to do with Mr Ben-Gvir's antics. One Israeli diplomat thinks Saudi Arabia, long rumoured to be considering formal recognition, will wait to see how inflammatory Mr Netanyahu's government proves to be before making any decisions.

In public, the Saudis insist recognition of Israel would only follow the creation of a Palestinian state. Privately, few Saudis believe this. Mr Netanyahu has already visited the kingdom and met Muhammad bin Salman, the crown prince and de facto ruler. They share a hostility towards Iran, and a sense that America is no longer a reliable protector. Formal ties with Israel would give the Saudis an overt security partner, a boost to their troubled standing in Washington and economic benefits to boot.

Mr Netanyahu himself expects a second wave of diplomatic agreements during his tenure. In an interview last month with al-Arabiya, a Saudi-funded news channel, he spoke about his hopes for an imminent deal with the kingdom. "It will be a quantum leap for an overall peace between Israel and the Arab world," he said.

He probably overstates the case. Few other Arab states are queuing up to join the accords. But a deal with the Saudis would be significant. Even if they are wary of Mr Netanyahu's government, they are not rushing to distance themselves from it.

In 2021, when the planned eviction of Palestinian families in East Jerusalem led to clashes at the al-Aqsa mosque and an 11-day war in Gaza that killed hundreds of Palestinians, Israel's new Arab friends issued unhappy statements. When the guns fell silent, it was back to business as usual. ■



Israel's diplomatic ties
Selected countries*, Jan 2023
Formal relations | Informal ties | No relations
Source: *The Economist* | *Morocco also has formal ties

Sex toys in the Middle East

Hands off

DUBAI

Women are breaking sexual taboos in the Middle East

EVEN THE act of defiance has to be discreet. On the wall of a private art gallery in Dubai, the raciest city in the United Arab Emirates (UAE), is a set of office pigeon holes. They contain photographs of home-made sex toys: mere photographs because if they were real, Dubai's police might seize them; they are home-made because importing them is banned.

In recent years sexual taboos have been broken across the Middle East. Receptionists no longer check that couples sharing a Saudi hotel room are married. Last year the UAE decriminalised premarital sex. A growing enthusiasm for sex toys reflects women's rejection of the idea that men should control their sexuality.

In Dubai customs inspectors scour the bags of incoming travellers, particularly women of Arab origin, and seize any sex toys. Most are let off with a warning. But under the country's indecency law, they can be fined up to 50,000 dirhams ($13,000) and put in prison.

Similar colonial-era laws prevail across the Middle East. Every year customs officers throughout the region confiscate dildos, vibrators and fluffy handcuffs. Many religious preachers reinforce such attitudes. Most consider masturbation to be *haram* or forbidden. The leading ayatollahs of Shia Islam, Ali Khamenei in Iran and Ali al-Sistani in Iraq, have issued *fatwas* specifically prohibiting sex toys. Sunni scholars also fulminate against them. An Iranian mullah has warned women against peeling aubergines lest it inspire improper thoughts. "Self-pleasure is the biggest taboo here," says Christina Lindea, a Finnish sexologist based in Dubai.

And yet people find ways around the bans. Some lingerie shops in Dubai's malls double as under-the-counter sex shops. Online shops offer "wellness enhancements", advertising vibrators as electric face massagers. Global demand for sex toys soared during the pandemic. Sexologists and retailers in the Middle East have seen similar trends. A vibrator called Deem goes for $85 online; it has sold out twice.

The recourse to sex toys is part of women's desire for greater empowerment, says Sura, the founder of Mauj, a website run by Arab women, whose name means "wave" (of sexual pleasure) and which sells Deems. In places like Dubai, expatriates, who make up 90% of the UAE's population, are accelerating the shift.

More open-minded religious figures are also playing a part. Unlike their Christian counterparts, Muslim clerics have long insisted that their religion encourages sex for pleasure, not just procreation. Sheikh Muhammad Fadlallah, an influential Shia Lebanese cleric who died in 2010, argued that female masturbation is not *haram* because no semen is spilled. Dildos make a legitimate substitute, he added, if the husband is absent or unable to satisfy his wife. Others are now making similar arguments. Ebrahim Desai, a Sunni cleric from South Africa, endorses sex toys if used for foreplay between married couples. Some Saudi clerics say vibrators are acceptable if they are not "invasive".

New platforms launched by women promote self-pleasure as an act of female liberation. Online videos are filling the sex-education gap by normalising taboo words such as clitoris (*bizr* in Arabic; *chuchuleh* in Persian). Love Matters, an Egyptian platform, challenges the stigma surrounding women's sexuality. "The tides are turning in the Middle East," says Sura. "We're tackling the culture of shame that governs our bodies and lives, and helping women explore their sexuality head on." If all else fails, counsels another website, "use your...fingers. They're free—and they aren't banned!" ■

Sudan's transition

The heavy cost of the coup

GEDAREF

The troubled east is a microcosm of Sudan's post-putsch crisis

IN THE CENTRAL marketplace of Gedaref, eastern Sudan, Mohammed Siddig counts the cost of the past year's turmoil. The price of fuel, which he needs to run his farm near the border with Ethiopia, is up by about 300%. School fees, which he pays for four of his children, have increased by 400%. Yet just as unrest at nearby Port Sudan hurt farmers' exports, the state-owned agricultural bank cut their subsidies. "It's totally unprofitable," Mr Siddig laments. His sesame and sorghum harvest recently fetched about half what it had the previous year. Now he is in debt, which he underscores by slapping onto the counter a bag of chickpeas that he is buying on credit.

Sudan's economy, already in a tailspin, tipped into recession last year. Although this may have brought inflation down a bit, it remains in triple digits, among the highest rates in the world. Roughly one-third of Sudanese (some 15m of a population of 44m) need emergency aid such as clean water, shelter or food, according to the UN. ▸▸

Almost 12m people are going hungry. Eastern Sudan, in theory the country's breadbasket, should be faring relatively better. But the long-standing neglect of the region by successive rulers in Khartoum, Sudan's capital, left deep wounds. The latest crisis threatens to reopen them.

Although the price shock triggered by Russia's attack on Ukraine did not help, the main reason for Sudan's political and economic trouble is its second coup, which came less than three years after protesters precipitated the fall of Omar al-Bashir, a brutal Islamist dictator who had ruled the country for three decades. Amid huge uprisings, the army, led by General Abdel Fattah al-Burhan, now the president, seized power. When demonstrations continued, the generals agreed to share power with leaders of the protests and promised elections in 2022. But, eager to avoid the fate of Mr Bashir (who is now on trial), they soon began blaming their civilian partners for mismanaging the economy and public services. In October 2021 they staged a second coup. Protesters have been on the streets almost every week since.

The putsch hastened the economy's collapse. Western donors and multilateral banks held back tens of billions of dollars they had pledged to rescue Sudan's economy and support its transition to democracy. The government responded by increasing taxes and slashing public spending, which prompted waves of strikes and protests. "The economy has ground to a halt," says Volker Perthes, the UN's special representative in Sudan.

The coup also made chronic instability worse. Instead of iron-fisted order, crime and lawlessness have spread. Between January and October last year more than 265,000 people were forced from their homes by violence. "The government is weak," complains Khalid Musa, a merchant in Gedaref whose house was recently burgled in broad daylight.

Worst-affected is the Darfur region, where government forces and the Janjaweed, a militia since rebranded as the Rapid Support Forces (RSF), committed genocide in 2003. But the east, especially Blue Nile state, has also seen a spike in violence over land and political representation.

Part of the explanation for the disorder is a power vacuum in Sudan's poorer peripheral states. "The centre lost its grip on power," says Waleed Madibo, a political scientist in Khartoum. Some 11,000 police have resigned over low pay. Others have been transferred to the capital. Because of this, "Anyone can do what he wants," says Abbas Bashir, a teacher in Gedaref.

But many suspect that politicians and generals are themselves behind some of the trouble. They have long governed far-flung states through networks of provincial aristocrats and traditional leaders known as "native administrations". Dating from the colonial period, these were later fostered by Mr Bashir as instruments of control. Many were unhappy about his overthrow. According to a tribal chief in Gedaref, two out of four native administrations in the state backed the coup in the hope of reinstating the old regime.


A struggle to survive

What price loyalty?

"Some of these tribal leaders are trying to play politics, or are being used to play politics, in Khartoum," argues Mr Perthes. In 2021, for instance, leaders of the Beja tribe in Red Sea state imposed a six-week-long blockade on Port Sudan, exacerbating food and fuel shortages in the capital. Just one week after the coup, the blockade was lifted. Prices duly fell.

More recently, the deputy head of Sudan's junta and arguably its most powerful man, Muhammad Hamdan Dagalo (better known as Hemedti), has been cutting deals in the east. The notorious commander of the RSF, who is from Darfur, is probably attracted by the region's strategic importance. Gedaref and Kassala states are rich in fertile land and gold. The Red Sea coast has ports that Russia and the junta's backers in the Gulf are eyeing.



Last year Hemedti toured the region, reportedly distributing land-cruisers to tribal leaders in exchange for loyalty. Since then the Beja High Council, a group of eastern tribal leaders responsible for blockading the port, has splintered. Some accuse Hemedti of being behind the divisions.

In December leaders of the civilian bloc and the junta signed a new accord promising a fully civilian government and elections in two years. If implemented, it should bring respite for Sudan's economy by paving the way for foreign aid and debt relief. "If you look at it objectively, it's actually a pretty good deal," says a Western diplomat. The generals, for their part, are bullish. The accord has been "accepted all over the world", says General Ibrahim Jaber, who is in charge of foreign policy.

But the agreement also opens up dangerous faultlines. Pro-democracy activists view it as a lifeline for the junta. They vow to demonstrate until the generals leave power. Yet they find themselves in the awkward company of several leaders from the peripheries who backed the coup. These include former rebels such as Jibril Ibrahim, now the finance minister, and Minni Minnawi, the new governor of Darfur. They are unhappy about the agreement's pledge to revisit another pact, signed in 2020, which brought rebels from Darfur and southern Sudan into the power-sharing government.

Also lined up against the deal are tribal leaders from the east, such as Sayeed Tirik, the Beja High Council's head, who denounced it as un-Islamic and a tool of foreign powers. He has drawn closer to disgruntled Islamists from Mr Bashir's former regime. He has threatened armed opposition if his demands, which include separate negotiations for the east, are not met. Such threats may now ring hollow, but they cannot be ignored: eastern Sudan suffered from a long-running insurgency until the mid-2000s. "Our assessment is that the centre of opposition...will come from the east," says a UN official.

Talks are under way in Khartoum to appoint a new civilian prime minister. Negotiations over thorny issues, including the prosecution of the generals for genocide and crimes against humanity, are also due to begin soon. "We are very committed to transitional justice," says General Jaber. But satisfying the diverse coalition of those unhappy with the direction of Sudan's fragile transition will be tricky. "Deluded are those who think that they could rule us from Khartoum," said Mr Tirik in a recent speech. It is a refrain with echoes through Sudanese history—and one which serves as a reminder of how little has changed since Mr Bashir's fall. ■



Ukraine

Hills to die on?

KYIV

Russia is bleeding, but reinforcing, in eastern Ukraine

THE LINE between life and death on the muddy hillocks south of Bakhmut, in eastern Ukraine, is thin. For Yaroslav Hervolsky, a soldier in a Ukrainian evacuation brigade, it can be indistinguishable. For two-and-a-half months now, Mr Hervolsky has headed under artillery fire into the mud to retrieve colleagues, dead or alive. The job has offered little respite. In mid-December a successful Ukrainian surge pushed Russian forces back a kilometre beyond the boundaries of the town. But it made little difference to Mr Hervolsky's workload, with Ukrainian losses continuing at the level of dozens daily. Now the Russians are attacking again, and the bodies are piling up. "It's hard to describe the feeling," he says. "Forty bodies stacked up on top of one another. Diesel, blood and rotting flesh. It's a fucking mess, and you never know if you will be next."

The front line near Bakhmut, a small and tired town 70km (43 miles) north of the city of Donetsk, is currently the most fiercely contested section in Ukraine. It offers little justification for the deaths of so many, which have been running at hundreds daily when Russian losses are included. The town has only limited strategic value, offering little but a source of water and a road-transport hub.

Its real significance lies far away in Moscow, as a proving ground for President Vladimir Putin's associate Yevgeny Prigozhin and the Wagner Group, his shadowy mercenary army. Recruiting from convicts and mobilised soldiers, Mr Prigozhin has taken command of the Bakhmut front, and is using it to demonstrate his own bloody vision of the future. But far from everyone in Moscow is happy, not least the military and political leaders whom the warlord has taken to criticising openly.

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The extent of collaboration between Wagner and the Russian armed forces was for a long time unclear. But Wagner found a way of co-operating with Russia's military hierarchy in late autumn. According to Serhiy Cherevaty, a spokesman for Ukraine's eastern command, this moment coincided with the appointment of a new operational commander, General Sergei Surovikin, a hardliner whose candidacy Mr Prigozhin had lobbied for. Wagner started to be supported by the regular military logistical network, says the spokesman, and even began to fight alongside elite units of the regular Russian army in strike groups. But recent reverses near Bakhmut and problems with logistics appear to have strained the relationship once again.

In late December Wagner released a video showing two of its fighters voicing a staggering attack on the commander-in-chief of Russia's armed forces, General Valery Gerasimov. The soldiers, who concealed their identities with scarves but appeared to be fighting near Bakhmut, claimed that Russia's top soldier was holding back munitions. "We are fighting the entire Ukrainian army, and where are you? There's only one word to describe what you are—a faggot." Loyalists condemned the outburst. But Mr Prigozhin later made a point of publicly backing his men.

A Ukrainian missile attack on a barracks in Makiivka, 60km from Bakhmut, ▸▸

on New Year's Day has fuelled yet more nationalist criticism of the Russian military leadership. The early-morning strike, courtesy of at least four Western-supplied HIMARS high-precision missiles, killed scores of (mostly newly mobilised) soldiers. Russia has said that 89 died; Ukraine says the figure is at least 400. Igor "Strelkov" Girkin, the eccentric former intelligence officer largely responsible for the outbreak of war in the Donbas region in 2014, said he had warned Russian generals about the likelihood of HIMARS strikes on barracks. "They [the generals] are untrainable in principle," he barked. Some in Russia have sought to blame the new recruits for their own demise, speculating that Ukraine was able to identify the barracks because the soldiers were, against orders, using their mobile phones.

Mr Girkin has a solid following among nationalists, but officials in Moscow are far more worried about the continued rise of Mr Prigozhin's star. That concern intensified in October and November, says Tatyana Stanovaya, a political analyst in Moscow, when people in the presidential administration saw the former convict establish a direct channel to Mr Putin. "Prigozhin is attacking governmental institutions with what amount to revolutionary positions, and that is frightening for many of them."

The defence minister, Sergei Shoigu, himself a regular target for Wagner's criticism, appears to be taking few chances, and has sent his own mercenary grouping, Patriot, to fight in the Donbas. Ukraine's spokesman Mr Cherevaty says the exact role the Patriot force will play is unclear. "It seems likely, however, that they have been sent to counterbalance Wagner."

In recent speeches, Mr Putin has underlined the primacy of the regular military leadership. But he appears unconcerned by the dangers of Mr Prigozhin's uncompromising alternative, says Ms Stanovaya. "Putin sees him as someone able to rouse the nation, and as a representative of some strange civil society." For the time being, the ex-convict remains firmly in Mr Putin's orbit. But if Mr Putin was once seen as invulnerable, persistent rumours that he has cancer and doubts about his military judgment mean that is no longer the case. If the position on the battlefield gets significantly worse, a power struggle could break out.

The more immediate response to Russia's serious and deepening military problems in Ukraine, however, is likely to be a new wave of mobilisation. Ukraine believes that this could start within days; its defence minister, Oleksii Reznikov, suggested last week that it could be accompanied by the announcement of martial law. Bakhmut seems certain to bear the brunt of any increase in numbers, as it already has done for months. "One day they are in disarray, the next they are replenishing, that's always been the rule," says Mr Hervolsky. "We struggle on. But there seems to be no limit to the amount of shit they can throw at Bakhmut." ■



Game-shooting in France

On the scent

MALAUCÈNE

The competing ambitions of walkers and shooters

ACROSS FRANCE, the forests and vineyards in winter are blissfully quiet. Apart, that is, from the periodic sound of gunfire. The season for *la chasse* (hunting) runs from September to February. Over New Year, when there is less to do in the fields, many farmers and other locals pick up their guns and head out in search of *sangliers* (wild boar), hares or other game. To the unsuspecting rambler, the sight of a fully grown *sanglier* fleeing along a footpath can prompt surprise—or worse. The number of accidents caused by hunting each year has triggered an intractable row about the use of the French countryside.

Game-shooting in France is not, mostly, an elite pastime. Over 1.1m people have hunting permits, making it the third-most-popular sport after football and fishing. For many locals it is at once a social get-together, a sport, a way to fill the fridge and a means of pest control. France's National Forests Office reckons that half of publicly owned forests have an overpopulation of boar, deer and other game. This can lead to the destruction of saplings and hamper forest regeneration. At an estimated 2m, France's wild-boar population has grown sixfold over the past 30 years. Rooting for acorns and beech mast or trampling on crops or vines, these long-snouted hairy beasts alone cause some €30m ($32m) of damage to crops each year. Culling them, say forest managers, is part of biodiversity management. In 2021, 842,000 wild boar in France were legally shot.


Fair game?

Yet hunting also led to 90 accidental shootings of people during the 2021-22 season, and eight deaths. This was more than in the previous season, although a drop from 31 deaths 20 years ago. Most victims are hunters, but passers-by are also at risk. Last season 17% of the accidents involved hunters shooting towards footpaths, roads or dwellings. After the death in 2020 of Morgan Keane, a young man shot while chopping wood near his house in the Lot region, a petition by his friends led to a Senate inquiry into hunting safety. Its report, published last September, made 30 recommendations, such as a ban on alcohol, which it blamed in 9% of the cases.

Despite the powerful French hunting lobby, and a fringe political party that represents it, rules have been tightened. A law passed in 2019 obliges game-shooters to wear an orange fluorescent jacket. In 2021 France's highest court outlawed the use of glue-traps to snare songbirds, in line with European practice. The government may now go further. Bérangère Couillard, the junior minister in charge, says there is "no taboo". She will unveil more proposals on January 9th.

One option would be to extend nationally a ban on hunting on Sundays that exists in some public forests. Green politicians want to outlaw hunting at weekends, on public holidays and in school holidays as well. Such ideas enrage *chasseurs*, many of whom also work during the week, and who accuse squeamish city-dwellers of imposing their values on everybody else. ■

Why Poland loves to hate Germany

Frenemies on the Oder

BERLIN

The two NATO allies can't stop squabbling. Politics is to blame

GERMANY AND Poland should be happy neighbours. Bound by close personal ties as well as €150bn ($159bn) in yearly trade, the two are key members of both the European Union and NATO. As Russia's invasion confronts Europe with the gravest security threat since the cold war, the pair are also, after America and perhaps Britain, Ukraine's most vital strategic allies. Poland is the main arms conduit into Ukraine and a host to millions of its refugees. Because of their own history with Russia, Poles have been among Ukraine's most ardent, generous and timely supporters. Germany, Europe's richest economy, has been slower to react but is now by far the continent's biggest contributor to the war effort.

Yet on January 3rd Arkadiusz Mularczyk, Poland's deputy foreign minister, lashed out at Germany. Calling the ostensible ally "disrespectful" and "unfriendly", he accused Berlin of trying to turn Poland into a "vassal state". He also called on the United Nations to intervene in support of Poland's claims against its neighbour.

Mr Mularczyk is particularly familiar with these claims. He helped write a three-volume study that tots them up. Sponsored by his Law and Justice party (known by its Polish acronym PiS) and published in September, it puts the bill for damages caused to Poland by Germany during the second world war at a colossal €1.3trn, about double Poland's GDP. On October 3rd Poland formally presented this demand to Berlin. The German response is a firm *nein*.

No one disputes the monstrosity of Nazi crimes in Poland. But they took place eight decades ago. Since then, Germany has ceded vast tracts of land to Poland and signed deals with varied Polish governments to close the books on the war. So the timing and blindness to precedent of the mounting Polish campaign against Germany, of which the reparations demand forms just a part, do raise questions.

There is a simple answer to all of them: Poland's polarised politics. Opinion polls show a slow slide in support for United Right, the coalition dominated by the nationalist, socially conservative PiS that has run the country since 2015. Strains have grown inside the coalition since it won a second term in 2019. Micro-parties on the far right whine that their bigger ally has gone soft, failing to stand up to what they see as bullying from the EU. With elections looming in autumn 2023, PiS is keen both to rally its base and to hold this alliance together.

Souring relations with Germany should be seen in the context of Poland's European policy, explains Piotr Buras of the European Council on Foreign Relations, a think-tank. As Brussels has pressed Poland, particularly over the government's efforts to quash judicial independence and enforce traditional "family values", PiS's leader, Jaroslaw Kaczynski, has increasingly pointed to Germany as a behind-the-scenes source of trouble. In December 2021 he claimed that its real agenda is to turn the EU into a "Fourth Reich". (Tellingly, Dmitry Medvedev, Russia's former president, put precisely the same contention in a New Year's message.) Even months after Russia invaded Ukraine, Mr Kaczynski was still suggesting that Berlin is colluding with Moscow to "enslave" Poland.

Neighbours with history

Such dark suspicions are not the only excuses to bash Germany. Mr Kaczynski's main sparring opponent on the left, Donald Tusk, Poland's prime minister from 2007 to 2014, happens to have partial German ancestry (quite common in western Poland) and served as president of the European Council. PiS and its allies, whose strongholds are in the rural east, have not shied from tarring Mr Tusk as a treacherous Germanophile. "This may sound crazy, but it makes sense in their particular bubble," says Wojciech Przybylski of Res Publica, a Warsaw research group.



Kaczynski plays the German card, again

Germany has also attracted blame to itself, and not just for failing to pay Poland the humble respect it has shown to others, such as Israel and France, in recognition of Nazi crimes. Mr Kaczynski is hardly the only eastern European to wag a "we told you so" finger at a generation of German leaders who blindly trusted Vladimir Putin, Russia's president, so saddling Germany with a feeble army and a dangerous dependence on Russian energy.

Mr Kaczynski draws strength from this sense of moral superiority, says Mr Buras. The irony is that he chooses to flaunt it just when Germany has at last admitted the error of its ways on Russia, and just as the two countries' policies converge more than ever. Despite responding heroically to Ukraine, it is Poland that is making trouble for the broader Western alliance.

When Germany found that the weapons it gives Ukraine are so heavily used that they often break down, Poland proved hesitant to allow the Bundeswehr to build a repair centre on its territory. This vital facility opened in Slovakia instead. When a stray Ukrainian rocket fell in Poland in November, killing two farmers, Germany hastened to offer its neighbour a battery of sophisticated Patriot air-defence missiles. The Polish government at first welcomed the offer, but Mr Kaczynski then said no, adding that German soldiers would anyway be too sissy to shoot at Russian aircraft. Only after an embarrassing week-long muddle did Poland back down, allowing the system to be deployed.

As elections approach, flip-flops by PiS may grow more common. Another occurred just before Christmas, when the government announced a compromise that would allow the release of some €36bn in EU grants and loans that have been stalled by a long quarrel between Brussels and United Right over judicial independence. Then came a sudden reverse, as PiS appeared to bow to objections from ultra-nationalist coalition allies. The issue remains unresolved.

United Right's anti-German drumbeat, gleefully echoed by state broadcasters, has clearly influenced Polish public opinion. An annual barometer of sentiments finds that last year, for the first time, more than half of Poles said relations with Germany are not good, with 35% describing them as downright bad. In December, perhaps in an effort at damage control, Andrzej Duda, Poland's largely titular president, a former PiS MP who often acts as a "good cop" to soften Mr Kaczynski's bluntness, paid a cordial visit to his even less powerful German counterpart, Frank-Walter Steinmeier. But it will take more than diplomatic niceties, dismissed by Mr Mularczyk as "fairy tales", to fix the current mess. ■

Charlemagne | The 6% club

Fifty years ago, the European Union began its enlargement. It is the secret of its current success



When six western European countries including France and West Germany created the European Economic Community (EEC) in 1958, their combined population accounted for a touch under 6% of the world's then 3bn people. A lot has happened in the ensuing 65 years, from German reunification to an extra billion or so Indians and several rejiggings of the global order. One constant has remained: the club today known as the European Union represents a touch under 6% of the world's now 8bn people.

This is not because of the French authorities' repeatedly dashed hopes for a continuous baby boom. Rather, of the 447m people now living in the EU, half are from 21 countries that acceded as part of seven waves of new entrants. The start of 2023 marks the 50th anniversary of the first enlargement. This ought to be the cause of champagne-popping in Brussels, a town that rarely misses an opportunity to celebrate a past milestone; a bash was recently held to mark the 35th anniversary of Erasmus, a university-exchange programme. Instead, a muted mood prevails. That is in part because the biggest joiner of the 1973 intake, Britain, later became the only country to leave the club. (Ireland and Denmark remain.) Nor is everyone a fan of enlargement, which has made the EU bigger but also more unwieldy. The prospect of another ten or so entrants being let in—mostly smallish states in the Balkans but also Ukraine, a country of 44m people—is as terrifying to some existing members as it is exhilarating to others.

That mix of (mainly) exhilaration and (a bit of) terror is how Anne Anderson, who joined the Irish diplomatic service just two months before accession, describes the mood in Dublin as 1973 dawned. "We wanted to show Ireland had earned its place at the table," she said at a recent event in Brussels put on by the Irish and Danish representations to the EU. Like Denmark's, Ireland's membership of the club has been a triumph, helping propel the country from agrarian conservative backwater to confident world-beating service economy. Joining the EU has proved "transformative for Ireland in every way: economically, politically, in terms of liberation for Irish women", says Ms Anderson. For example, an old Irish rule that forced women to resign from the civil service on marriage soon fell foul of EU law. That turned out to be good news for Ms Anderson, who would go on to represent Ireland at the EU, then become her country's first female ambassador to America.

Being part of the EU shook up its incoming members. "1973 was a case of saying goodbye to the old world," says Connie Hedegaard, a former EU commissioner from Denmark. But the new members in turn shook up the club they were joining. The first accession proved that the European project could push beyond the confines of Charlemagne's empire, the rough footprint of the first six EEC countries (France and Germany plus Italy, Belgium, the Netherlands and Luxembourg). A tradition of common law in Ireland and Britain needed to be accommodated; a friendlier approach to America, too. And a template now existed for future joiners. In the 1980s Greece, Portugal and Spain were let in. All three had been dictatorships just a decade before accession. A big batch in 2004 anchored swathes of eastern Europe to a brighter future.

Enlargement is sometimes described as the EU's most successful foreign policy: the prospect of joining the bloc has acted as a carrot, keeping neighbours on the path of reforms needed to do so. That is true, but it also belittles the way in which those countries have strengthened the EU once inside.

The French in particular complain that an ever-wider union has made it impossible to develop an ever-closer one. To them, enlargement was a British ploy to ensure the EU could become little more than a free-trade area. But size has given the union heft it would not otherwise enjoy. Had the union resisted enlargement, would the vaunted "Brussels effect" exist, whereby regulation devised in the EU capital in effect becomes a global standard? Sanctions against Russia would carry less bite, the single market would stretch less far, trade deals might be less advantageous. True, decision-making can be slow, particularly in areas where unanimity among EU members is needed. When the decisions are eventually taken, however, a larger union makes them more potent.

Enlargement is not cheap. Of the 19 members let in since 1973, all but three get more money from the EU than they pay into it. Against that, eastern Europeans drive up economic growth as they converge towards Western living standards. Some newer member states—bolshy Poland and autocratic Hungary come to mind—have dampened enthusiasm for later enlargements, not to mention appetite for future ones. But Ireland and Denmark were obstructive too, in their time. Twice in the 2000s Ireland temporarily derailed new constitutional arrangements for the entire EU. Denmark is the spiritual heir to Britain in its approach to Europe: proudly out of the euro and of police co-operation, for example.

And on to Kyiv

What is worrying now is how poor the prospects for future enlargement are looking. In July it will be a decade since the last member, Croatia, got in—an unprecedented gap since the EU started to expand. None of the ten countries knocking at the club's door is close to joining. More existing members mean more potential vetoes, given that unanimous consent from national governments is required to admit newcomers.

Before enlargement Europe was not so much a common polity as a geographical expression. Now citizens in all 27 countries agree that what brings Europeans from across the continent together is more important than what separates them. The same citizens are in favour of welcoming new members, even more so in the wake of the war in Ukraine. A journey started half a century ago in Copenhagen and Dublin should be continued in Tirana and Kyiv. Whatever its shortcomings, the EU should celebrate its most successful policy. *Sláinte! Skål!* ■



Britain and the EU

Careful assembly required

BRUSSELS, DURHAM AND LONDON

The components for a better relationship are there. Putting them together will not be easy

BRITAIN'S GROWTH CRISIS

Greg Vaitsas wanted to introduce his neighbours to fine Greek foods. For the first decade, the delicatessen he opened in east London with Paulina, his girlfriend, motored along. But in November he gave the keys back to the landlord. Brexit had brought hefty customs charges and bundles of paperwork; overnight the stream of small consignments of wines, oils, meats and cheeses they sourced from tiny island producers was throttled. Better to shut up shop, Mr Vaitsas thought, than to rely on wholesalers that supplied the same big brands to all the other stores. "We did not allow it to degenerate into something that wasn't our dream."

The reality of Brexit is hitting home for others, too. It is now two years since the Trade and Co-operation Agreement (TCA), the trade deal negotiated by Boris Johnson, took effect. The picture is muddied by the effects of covid-19 and high energy prices; it is too soon to assess Brexit's long-run effects. But the evidence suggests that leaving the bloc has inflicted a lot of damage.

John Springford of the Centre for European Reform (CER), a think-tank, has constructed a phantom country that tracked Britain's performance before the referendum in 2016. This shadow nation shows the path Britain might have taken had it not voted to leave the EU. He estimates that by the second quarter of 2022, Brexit had left GDP 5.5% smaller and dragged down investment by 11% (see chart 1 on next page). Given that Britain was already one of the worst performers on investment among G7 countries before the referendum, Brexit seems to have made a bad situation worse.

Mr Springford's model has its critics, but the picture he paints is plausible. The uncertainty induced by years of bickering over the terms of Britain's departure has put managers off making big investments. Trade barriers have done their job: British exports to Europe have fallen from 70,000 to 42,000 product types, according to a paper by researchers at Aston Business School. The dream of a "sovereign global Britain" has fizzled. A promised trade agreement with America has gone nowhere. Trumpeted ones with Australia and New Zealand are expected to lift GDP by 0.08% and 0.03% per year respectively.

Mr Johnson's form of hard Brexit suddenly looks more fragile. If you exclude people who answered "don't know", 60% of Britons now think leaving the EU was an error, according to polling by YouGov (see chart 2 on next page). Only a quarter pick rejoining as their preferred solution, but some 70% of Britons favour a closer relationship with the EU, according to the Tony Blair Institute, a think-tank.

The path to a smoother relationship between Britain and the bloc does exist. It involves first normalising relations, then exploiting the TCA to the full, and then bulking it out with new provisions. A new and deeper form of integration would be a final step. But the route is strewn with obstacles—and not just because of the recalcitrance of Brexiteers in Britain.

The solipsism that the relationship is largely a matter of British choices persists in Westminster. But no one in Brussels is itching to reopen a divorce that has already swallowed too much of their time. "There ▸▸

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will not be political traction in the EU to change the relationship, until there is something quite clear coming from London," says Nathalie Loiseau, an EU lawmaker and an ally of President Emmanuel Macron of France. Since Britain is the smaller market, EU business lobbies have far fewer gripes with the TCA than British ones. "For us, success means no longer talking about Brexit," says an EU diplomat.

The good news is that a normalisation is under way. Mr Johnson is out of office. Rishi Sunak promises a "respectful, mature" relationship. A flurry of modest initiatives points to a thaw. During her brief tenure, Liz Truss signed up to the European Political Community, a pet project of Mr Macron's. Britain has joined a scheme to rapidly move military kit across borders and volunteered to help police the EU's southern border against migrants. In December Britain joined an EU programme to build wind farms and electricity interconnectors in the North Sea. For British officials, this is a taste of the near-term future: not yet touching the TCA, but overlaying agreements in areas of common interest.

Whether this is a false dawn depends largely on Northern Ireland. No sooner had the TCA been signed than Mr Johnson began unpicking the withdrawal treaty that preceded it, and specifically the protocol which in effect keeps the province in the EU's single market for goods. The protocol means that there are no border controls on the island of Ireland, in an effort to prevent sectarian conflict, but it created a customs and regulatory border in the Irish Sea instead. That infuriates both (pro-British) unionists in Northern Ireland—the largest unionist party withdrew from devolved government in 2022 in protest—and Brexiteers on the mainland.

Mr Johnson and Ms Truss left behind a ticking bomb, in the form of a bill currently before Parliament that would allow ministers to unilaterally discard bits of the protocol. In response the EU has frozen chunks of the deal provisionally agreed with Mr Johnson. They include participation in Horizon, a vast scientific-research programme, and Copernicus, a space-satellites programme, as well as co-operation deals between regulators in competition policy and financial services.

Mr Sunak has promised a resolution to the row over the protocol in time for the 25th anniversary of the Good Friday peace agreement, which falls in April. "It's like having something in your eye," says a British official. "You can't focus on anything else." The European Commission is ready to "de-dramatise" the existing checks on goods crossing the Irish Sea, through shared customs data and whittling away at the paperwork. But it refuses to make the big structural changes to the protocol that many Conservative MPs want, including gutting the role of the European Court of Justice. As so often, a Tory backbench rebellion could shatter a fragile deal.

Mr Sunak's wider choices on regulatory policy pose a further risk of conflict. The prime minister says that he wants to take advantage of Brexit by fine-tuning the rule book in a few high-value sectors, such as financial services, artificial intelligence and life-sciences. That would be a manageable concern for the EU. But a second bomb left by Mr Johnson worries diplomats gravely: a monster bill to amend or repeal all EU law by the end of 2023. Intended to facilitate a hard and fast divergence with the bloc, it could slice through Britain's obligations under the TCA to uphold environmental and labour standards.

Things can quickly fall apart. If Britain did unilaterally override the Northern Ireland protocol, for instance, the EU would respond swiftly, possibly by suspending the trade deal and levying tariffs. Britain's relationship with the bloc is fragile by design, reflecting the mistrust on which it was built. EU permissions for data-transfers and the clearing of derivatives will lapse in June 2025, and need to be renewed. Agreements on fisheries and electricity expire the year after. The relationship is a bicycle: stop cycling and it falls over.

But strike a deal on Northern Ireland, and avoid a new front over aggressive regulatory divergence, and relations could greatly improve. "It would be a very big symbol of mutual trust, the thing we have been missing for some years," says Ms Loiseau. That could allow Britain to fully exploit the TCA, from participation in Horizon to shaving frictions at the border. The TCA is an elaborate structure. A powerful partnership council led by politicians can amend much of the deal. Beneath it sit 18 technical committees in fields such as aviation, customs and intellectual property, tasked with identifying snags and fixes. Currently, these committees "are operational, but they are not operating," says Charles Kinnoull, chair of the European affairs committee in the House of Lords.

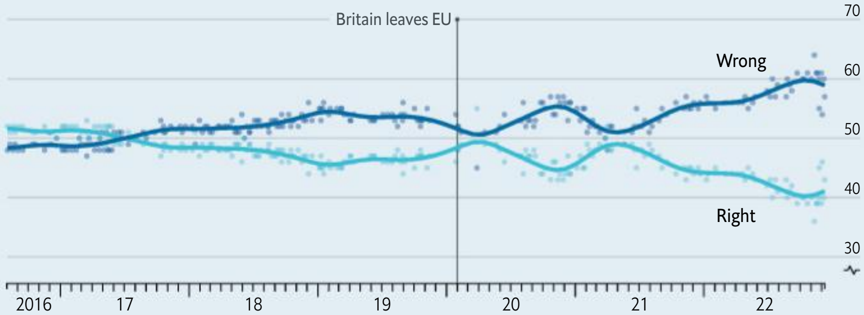
If normalising ties and making the most of the existing TCA are the first steps to a better relationship, the next would be to widen its purview. The deal comes up for its first five-yearly review in 2026. If Mr Sunak wins the election, the veto power of the Eurosceptic Tory right would make an expanded TCA nigh-on impossible. But if the Labour Party is in office by then (an election must be held by January 2025, and the polls point to a big Labour victory), that could spell a new beginning. "They're desperate for a British government that wants to engage," says Rachel Reeves, the shadow

Doppel take
£bn



Source: Centre for European Reform
*A composite created from 22 countries to match Britain's economy

Goodbyers' remorse
Britain, "Do you think Britain is right or wrong to vote to leave the EU?", % responding



Source: NatCen Social Research

chancellor. "I do feel we'd be knocking at an open door if we went in with a different attitude to our future relationship."

Up to a point. To understand the challenge ahead for a Labour government, revisit the painful birth of the TCA. It is a conventional free-trade agreement, similar to the bloc's deal with Canada. It eliminates tariffs on goods, but does little to remove regulatory barriers or to facilitate the movement of services and people. That was in part the choice of David Frost, Mr Johnson's confrontational chief negotiator, who was fixated on a concept of British "sovereignty" that insisted all obligations under EU law were scrubbed.

But it was not Lord Frost's choice alone. His opposite number, Michel Barnier—backed by EU governments—was also determined to prevent Britain "cherry-picking" elements of the single market. Out meant out. Principle fused with self-interest: why, Mr Barnier asked, should Europe let Britain be its hub for things like legal services? A hard Brexit suited everyone.

Sir Keir Starmer, Labour's leader, does not plan to up-end this basic settlement. He is after a fast, off-the-peg agreement that would allow him to claim he has "made Brexit work" while avoiding the quagmire of EU negotiations that has broken previous prime ministers. To that end Labour proposes a veterinary agreement, which would allow agricultural products to be freely exported (a big bone of contention in Northern Ireland). A mobility agreement would ease the bureaucracy around short-term visits for businesses, artists and musicians; even Lord Frost now admits he was "too purist" on this point.

The party wants a security treaty with the EU, too—something British officials were wary of for fear of entangling foreign policy in the toxic politics of Brexit. In theory, all three agreements are possible. "They are not breaching anyone's red lines; they are just things that Boris Johnson and David Frost didn't want," says Charles Grant of the CER.

But they will demand extensive negotiations, and diplomats worry that Labour's stance is fuzzy. In the case of a veterinary agreement, for example, the commission would insist that Britain stays in line with EU law ("dynamic alignment", in the jargon). That goes far beyond the party's promise not to cut standards.

The party's hopes for a bolt-on agreement on certifying industrial goods, so that a product approved as fit for sale in one market is automatically certified in the other, overlook the fact that the EU refused similar requests from Lord Frost. "Even if you normalise the relationship, that won't obliterate the economic interests the EU has to defend," says Georg Riekeles, a member of Mr Barnier's team. "They are going to look at the EU with puppy eyes,



and the EU will take out a gun and shoot the puppy," fears a former British official.

This worry—that a big chance to reset the relationship will be squandered—applies to the EU, too. The bloc has done too little thinking about how to embrace a Labour government that wants to move closer to Europe, says Rem Korteweg of Clingendael, a Dutch think-tank. "There is one moment to get it right, and we need to avoid a knee-jerk reaction, saying 'Here we go again, this is cherry-picking.' The political damage that would do is immense."

Ever closer

A beefed-up TCA could make a big difference to a few sectors, such as farming, notes Sam Lowe of Flint Global, a consultancy. The fading threat of a trade war over Northern Ireland should help business investment pick up. Yet the trade barriers thrown up by leaving the single market and customs union would largely remain. To tackle the damage that Brexit has done to Britain's growth prospects requires deeper integration. "The choice is to warm up the deal we have now versus seeking to change the parameters of the relationship," says Denzil Davidson, a former adviser to Theresa May, Mr Johnson's predecessor.

A deal with the EU like Norway's, fully inside the single market but without a vote on its rules, is often seen as a possible model. Yet Mr Barnier's team never thought this a stable settlement for a large services economy, discloses Stefaan De Rynck, an aide, in a new book. The rule-taking it demands "would have put Euroscepticism on steroids".

Finding a middle way would mean scoping out terrain somewhere between "Norway" and "Canada." Precedents exist. Switzerland is a de facto member of the single market in pharmaceuticals, aviation, haulage and other areas; in exchange the Swiss adopt broad swathes of EU law. This was the turf scouted by Mrs May, who sought to remain in the single market for goods and stay outside it for services. She was felled by her own party before her proposals could be fully tested out.

Lateral thinking is again in the ether. Peter Mandelson, a former EU commissioner, calls for a "reconceptualisation" of the relationship. Take financial services. The City of London is relying on the EU's bog-standard equivalence regime, which grants market access based on an alignment of rules. But Britain has been given access in far fewer areas than America, Hong Kong or Singapore. A "high ambition" deal would see financial regulators co-ordinate policy more tightly and adopt a "more rational, less mercantilist" approach, says Lord Mandelson.

Philip Hammond, a former chancellor of the exchequer, suggests a new grand bargain on migration policy to alleviate Britain's skills shortages. More EU citizens departed than arrived last year. A right of access to Britain's labour market could be exchanged for far deeper access to the European services market, says Mr Hammond. A return to the EU's customs union is also theoretically possible, if a future government were ready to forgo the (thus far) economically nugatory but politically potent idea of an independent trade policy.

The moment to rethink Britain's relationship will come in the second half of this decade, as the EU grapples with the membership ambitions of Ukraine and some Balkan states, says Nicolai von Ondarza of the German Institute for International and Security Affairs. The architecture of the wider continent will be in flux. "A smart British government could actually push the EU quite far," he says. "If you add enough building blocks, you could move from the very hard Brexit we have today to a quite significantly softer version."

Yet it would also require a revolution in thought. For British leaders it would mean a less dogmatic approach to EU law and free movement. One minister's recent suggestion that Britain's relationship with the bloc could eventually become more Swiss triggered paroxysms in the Tory party. For the EU it would require an even bigger leap: bringing a large, unpredictable rival uncomfortably close. In his memoirs Mr Barnier warns European leaders to be vigilant against Britain attempting to re-enter the single market "through the windows".

Convergence, then, can seem both inevitable and impossible. In an era of rivalry with China and war in Ukraine, the thin TCA "simply cannot bear the weight" of the relationship both sides need, says Sir Jonathan Faull, a former commission official. But overhauling the relationship will take time. Mr Vaitsas would have kept his deli open for longer, if he thought a solution was close. But he is 46, and wants to move on. "I think it might take a generation again for something significant to help." ■

The gender wars

Questions of recognition

A Scottish law on transgender rights raises questions about devolution

TWO OF THE more divisive issues in British politics are transgender rights and Scottish independence. They have collided in the form of a bill passed by the devolved Scottish Parliament at Holyrood on December 22nd. The new law allows people in Scotland to acquire a gender-recognition certificate (GRC) that changes their designated sex in the eyes of the law without, as previously needed and still required in the rest of Britain, a medical diagnosis of gender dysphoria or a long waiting period.

Debate within Scotland was heated. Although all the main parties, except the Tories, supported the introduction of "self-ID", there was unusual dissent within the ruling Scottish National Party (SNP). Only 54 of 64 SNP members at Holyrood voted for the bill. The controversy is not over. The British government has a limited time to decide whether it wants to block the law or refer it to the Supreme Court in London. Scotland has long had separate rules over everything from marriage to jury trials. The question in this case is whether enabling a person to be legally recognised as the opposite sex based on self-ID affects other legislation pertaining to sex, such as the Equality Act, which is an issue "reserved" for Parliament in Westminster.

Start with the content of the law itself. Colin MacFarlane of Stonewall, a lobby group, told *The Guardian* that the new law was "a tremendous step forward for trans rights and for LGBTQ+ people in Scotland". But many women's groups worry that dangerous men could exploit an easier process for obtaining a GRC to gain access to vulnerable women and children. "It opens up a process to anyone and everyone, whatever their motivation," says Susan Smith of For Women Scotland, a feminist group.

Supporters claim many countries—such as Ireland, Canada and Norway—and American states such as California have passed self-ID laws without problems. But Lisa Mackenzie of MBM, a policy-analysis group based in Edinburgh, points out that in those jurisdictions, male rapists who now identify as women are being moved to women's prisons. Biological males have accessed domestic-violence and homeless shelters for women. "Self-ID disproportionately affects disadvantaged women," says Ms Mackenzie. She adds that, under self-ID, crimes committed by natal males are recorded as women's crimes, making it impossible to gather accurate data.

Opponents also worry that the new Scottish law could bring self-ID to the rest of Britain through the back door. Other Britons might make their way to Scotland in order to obtain a GRC, since there is no long-term residency requirement for getting one. The lowering of the minimum age from 18 to 16 might mean that a Scottish-born natal male attending an English school could obtain a GRC and ask to be placed in a girls' dormitory or sports team.

That in turn raises the question of whether Holyrood has exceeded its authority. The SNP may have inadvertently harmed its own claim that the new law does not affect reserved equality laws. In a decision on December 13th, before the bill was passed, Scotland's highest court backed the Scottish government's intention to include trans people with a GRC in its definition of women for the purposes of female representation on public boards. The ruling states that, for the purposes of the 2010 Equality Act, the meaning of sex is "not limited to biological or birth sex". Opponents say that reserved law is therefore infringed by the new Scottish act. James Mitchell, professor of public policy at Edinburgh University, says that Nicola Sturgeon, the SNP leader and Scotland's first minister, may have "shot herself in the foot", and that it is hard to see how the issue will not end up at the Supreme Court.

A row over the remit of Holyrood comes at a sensitive time. In November the Supreme Court ruled that Holyrood could not authorise a second independence referendum. Ms Sturgeon says that she will make the next general election, due by January 2025, a de facto vote on independence. Rishi Sunak needs to tread carefully as a result. But Ms Sturgeon is also on shaky ground: polls find that two-thirds of Scots disagree with the core of the new law. ■

Turbine tourism

Windrush

BRIGHTON

Britain's offshore wind farms draw visitors

FOR YEARS Paul Dyer relied on the dual attractions of diving and fishing to pull tourists away from the bars and ice-cream parlours that dot Brighton's seafront. Then came Rampion, a 400MW offshore wind farm now operated by RWE, a utility firm. Its construction limited opportunities for diving trips. So Mr Dyer bought the domain name "www.rampionwindfarm.co.uk" and began offering boat trips for tourists to see the wind farm up close. Four years later business is booming. "It just gets busier and busier," he says.

Rampion faced opposition because locals said it would spoil the view of the English Channel from the South Downs National Park, part of which overlooks Brighton. Yet where some see ugliness, others see beauty. At least five companies are now offering boat trips. "There's enough to go around," says Steve Johnson, another tour operator.



Blades and boats

Visitors range from environmentalists to corporate folk. Employees of oil firms have been booking trips. "They've all got departments that work in renewables," says one sailor. "But they've never seen a wind farm." Others come from farther afield. "We get a lot of engineering types," boasts another. "So a lot of Chinese." With the air of a taxi driver proud of having a TV star in the back of their cab, one mariner brags that he recently had a certain East Asian ambassador on his boat, who wants to build offshore wind farms back home. Sailors are adept at talking about wind-farm technology. "I just sit there and give them 45 minutes of spiel," says one.

Mr Dyer claims that his trips have helped to assuage the concerns of locals who campaigned against the wind farm being built. But trouble is brewing again. RWE is planning a big expansion of Rampion, adding 90, much taller turbines to the existing 116. Campaigners argue that this would harm wildlife and habitats. "Tourists like a boat trip," says Zoe Visram of the Middleton-On-Sea Coastal Alliance. "However, that does not warrant building a gigantic wind farm close to shore." Many a skipper might disagree.

Bagehot | The dark ages

Youth is wasted on the young. But wealth is wasted on the old



PITY THE millennial. Greying at the temples, thinning on top and thickening round the middle. Once a shorthand for rebellious youth, now even the prime minister (born in 1980, uses more than two fingers to type) falls into this increasingly aged category. The typical millennial is haunted by Instagram adverts for fertility treatment, wills and Viagra.

If the ravages of time were not bad enough, then the iniquities of British society make things worse. Life is pretty tough for the generation sinking into their middle years. It is a time when people are supposed to be kicking on with their careers, rearing children and, often, caring for ageing parents. But it is also a time when housing and child-care costs combine with uneven taxes and an unbalanced welfare state to create a miserable period. Call it the Dark Ages. (Bagehot should declare an interest: he is slap-bang in the middle of them.)

As with most problems in British politics, it all starts with housing. The average age of a first-time buyer is 32. Those who bought a house recently may be on the wrong side of a leveraged bet on the most expensive asset they will ever buy. If house prices crater, younger people will find it easier to buy; older homeowners will be insulated, having built up more equity. Those in the Dark Ages will be stuffed. Even before mortgage costs shot up, affordability was stretched. The average house costs about £300,000 ($362,000). When the median salary is about £33,000, it takes two earners to afford one. That makes child care inevitable, unless Granny and Grandpa are around.

Unfortunately, Britain has among the most expensive child care in the world. British parents spend between a quarter and a third of their income, depending on how it is measured, on paying other people to look after the sprogs. The government has parked plans to give parents more free child care, along with a scheme to reduce required staffing ratios in a bid to make it cheaper.

Still, 30-somethings on average earnings can surely console themselves that their basic rate of income tax is a mere 20%. Unfortunately, things sometimes go haywire in the tax system—and those in the Dark Ages are often the victims. Policies such as whipping away child benefit from the moderately well-off mixes poorly with a byzantine and often cruel working-age welfare system. An unlucky household with children could in some circumstances face a marginal deduction rate of between 80% and 96%, according to the Resolution Foundation, a think-tank.

Every generation thinks they have it rough. Someone with a mortgage during the early 1990s may have struggled with rocketing interest rates (even if lower house prices made those loans more affordable). Houses may have been cheap in the 1960s, but petrol had lead in it, men dropped dead in their 60s and women could not open a bank account in their own name.

Some have it better than others, however, even if they do not always like to admit it. Those who are now at retirement age will have benefited most of all. On average someone born in 1956 will pay about £940,000 in tax throughout their life. But they are forecast to receive state benefits amounting to about £1.2m, or £291,000 net. Someone born in 1996 will enjoy less than half of that figure: a fresh-faced 27-year-old today will receive barely more than someone born in 1931, about a decade before the term "welfare state" was first popularised.

And so a fundamental part of the social contract has broken down. Before Britons exchanged a miserable middle age for a gilded retirement. "Giving goods to an older person is figuratively giving goods to yourself when old" is a neat adage from Paul Samuelson, an economist. Those in the Dark Ages will pay more and receive less. Boomers used their demographic weight to slant the state to their benefit, argued David Willetts, a Conservative grandee, in "The Pinch", a prescient book published in 2010 on inequality between the generations. Millennials are bearing the cost.

It would be better—politically, economically and socially—to offer younger voters something today. It is in the Conservatives' political interest. British millennials are the first generation to buck the trend of drifting right with age, according to one study by the *Financial Times*. For some MPs this is proof that the generation is irredeemably woke. More thoughtful Conservatives take a materialist view: it is hard to vote for the party that offers them so little. At the moment, neither head, heart nor wallet provides much reason for younger people to vote Conservative.

Helping those stuck in the Dark Ages might boost the economy, too. Better access to child care could boost output per worker by 30% according to one controversial study, if inept male workers are replaced by competent women. Even if the gains from better child care are smaller, they would be welcome for an economy in sore need of productivity growth.

More self-interested millennial moaning below

Intergenerational inequality leads to intergenerational conflict. Some pensioners are poor, but more are rich. Although one in five pensioners is in poverty, one in four lives in a household with assets of more than £1m, thanks to a booming property market and generous pensions. Friction between haves- and have-nots is inevitable, even if they are separated by age. Merely waiting for inheritances to cascade down through the generations is a recipe for an unhappy society.

Each of these problems is fixable. The government could and should do more for young parents. That child care is unaffordable is not a fact of life, as any German can attest. That Britain's homes are small and dear is not a law of nature, but a choice of successive governments. That Britain's taxation system is tilted too far towards income, while property wealth is left undertaxed, is a policy decision. The government could choose differently. Spread some light on the Dark Ages and everyone would be better off. ■



Roman Catholicism

The arguments will persist

ROME

Pope Benedict's death removes a problem for liberal Catholics, but the church's future is still clouded with doubt

The moon was high over the avenue that stretches away from St Peter's, yet a stream of visitors was still issuing from the great basilica. Inside, the body of Pope Benedict XVI was laid out for people to pay their respects before his funeral on January 5th. Vatican officials were reportedly taken aback by the size of the crowds. On the first day, January 2nd, visitors had to queue for three hours. By the next evening, they were still waiting for 40 minutes.

Many were tourists drawn to a unique occasion. Benedict, who resigned in 2013, was the first pope in almost 600 years to quit before his death. Others who came were religious admirers. "Theologically, he represented a reawakening of the conscience of the modern, Western world," said Stefano Crescentini, who had travelled to Rome from Perugia in central Italy. "He stood for fundamental, non-negotiable values," added his wife, Susanna.

The death of a pope has far-reaching consequences, even when the pontiff in question has not led the Roman Catholic church for ten years. In the case of Benedict's, the most obvious is to relieve his more liberal successor, Pope Francis, of a source of periodic irritation.

Francis has had to provide spiritual guidance to the world's 1.4bn baptised Catholics in the knowledge that a prelate with immense authority and radically different ideas was living a few hundred yards away, in the Vatican gardens. Benedict continued to wear the all-white habit of a pontiff and styled himself "Pope Emeritus". He made few public appearances, and his relations with Francis were said by Vatican insiders of all persuasions to be genuinely affectionate. But he continued to make his beliefs known.

→ Also in this section
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The tally of Benedict's post-papacy sermons, letters, messages to conferences, interviews and other texts comes to around 30. In some, he implicitly contradicted his successor. More overtly, in 2020 he co-wrote a book defending priestly celibacy just as Francis seemed to be edging towards easing the ban on married priests. Only after controversy did Benedict have his name removed from the cover.

While alive, he was a symbol of traditional values who served as an inspiration for the critics of Francis's papacy. Some even questioned whether Francis's election could be valid when a predecessor was still alive and in possession of his faculties. Almost as controversially, Benedict's personal secretary, Archbishop Georg Gänswein, suggested in 2016 that the two popes represented a new kind of expanded ministry, with one "active member" and another "contemplative" one.

The other discernible effect of Benedict's passing is to make it possible for his successor to step down in turn. (If having two living popes was regarded as unfortunate, having three was unthinkable.) Francis shows no sign of wanting to resign. But he signed a resignation letter shortly after ▸▸

his election, to take effect in the event of his incapacity. His health has deteriorated in recent years and, at 86, he is older than Benedict was when he stepped aside.

Two-thirds of the cardinals who would elect Francis's successor, were he to step down now, are men on whom he has conferred the red cap of "a prince of the church". That proportion will grow as time passes and the cardinals appointed by Benedict and John Paul die or reach 80, the age at which they lose their right to vote. It is thus easy to see Benedict's death as heralding a more liberal era in the Catholic church, in which Francis has a freer hand to introduce the sort of reforms for which liberal believers yearn. But such an interpretation is too simplistic—and too parochial for a church that increasingly draws its flock from Africa and Asia rather than its traditional European heartlands.

Holy chalk and cheese

Start with the first point. One effect of Benedict's death has been to remove a source of division between Francis's critics. They may have revered Benedict's conservative theology, his loathing of moral relativism and advocacy of dogmatic certainty. But many were appalled by his resignation, which broke a long tradition. The last pope to resign had been Gregory XII, in 1415, when the hot new technology was the English longbow.

The ten-year "cohabitation" between the two popes also acted as a brake on the more extreme conservatives. It was hard to depict Francis as an illegitimately installed antipope with his predecessor manifestly demurring. As more than one Vatican-watcher has observed, Benedict's death strips a layer of protection from his successor. From now on, any decision Francis takes will be his alone. It could also mean that an already profoundly divided church

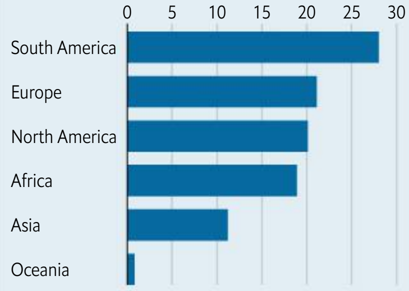


A truly catholic Church

Spreading the word

Baptised Catholic population

2020, % of world total



Sources: Agenzia Fides; Vatican News

will become yet more openly polarised. Francis may be no keener than in the past to impose radical change.

No pope wants to preside over a schism. Yet the portents of a split are discernible in Germany, where most bishops support reforms that include letting women become deacons (a rank below a priest) and letting priests bless same-sex marriages. They are also perceptible in America. Catholics account for a fifth of voters. Elements of the Catholic agenda, particularly its disapproval of abortion, chime with the aims of conservative politicians.

Benedict's influence on Catholicism remains strong in America, partly because of the appointments he made as pope. His conservative protégés, and those of his predecessor, now dominate the American bishops' conference. In the presidential election of 2016 the tacit approval of conservative bishops probably won Donald Trump some crucial votes. In June a Supreme Court tilted to the right by judges appointed by President Trump overturned a long-standing ruling that had declared abortion a constitutional right.

Abortion is just one of several issues over which bishops appointed by Benedict have clashed with his successor. In line with Catholic teaching, Francis often reiterates his opposition to abortion. But he does not elevate it above other issues. Instead, he has sought to cast the fight against poverty and the rights of immigrants as "pro-life" issues in their own right. Some conservative bishops have joined him. Others have raged against this change of emphasis.

Such views are normally expressed in private. Yet this summer, Archbishop Joseph Naumann of Kansas City said the Vatican's opposition to a plan by some American bishops to deny communion to pro-choice politicians showed "[Francis] doesn't understand the US, just as he doesn't understand the church in the US." Criticism of Francis is a reminder that, outside its western European homeland, Catholicism is at least as "Benedictine" as it is "Franciscan". That matters, since growth in new places and decline in old ones has made Catholicism more widely spread than ever before (see chart).

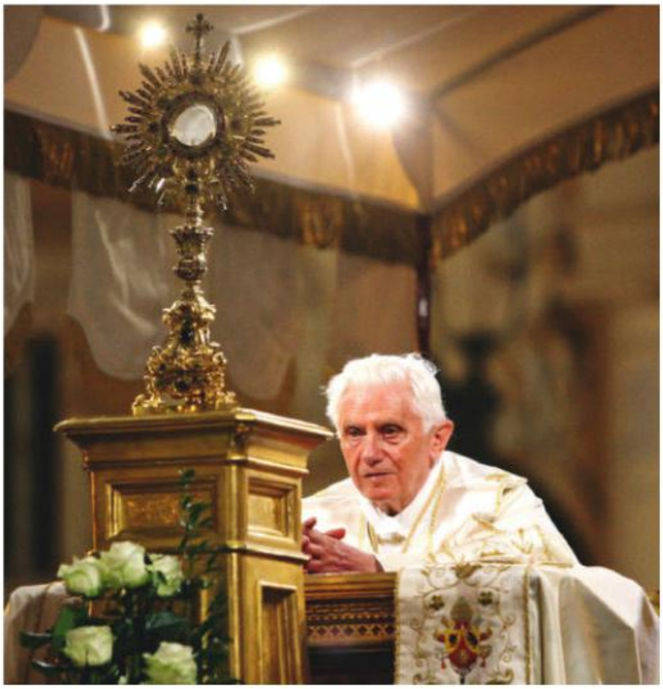
Indeed, if you were looking for the new face of the church, it would not be a frustrated German priest, glumly tending a diminishing flock, but someone like Father John Ruban from Tamil Nadu in India, walking away from St Peter's after bidding farewell to Benedict. "He was a very strong pope who would not abandon the basics of the Catholic church. I think people in India loved him more than people in Europe."

Before his elevation, Benedict was Cardinal Joseph Ratzinger, the church's theological overseer (see next article). The nuances of his conservativism earned him the respect of many in poor countries. Father Tom Reese, a former editor of *America*, a Catholic magazine, who speaks for the liberal camp, has pointed to the differences between Benedict's thinking and that of American non-Catholics. Benedict's encyclical, *Caritas in Veritate* (Charity in Truth), published in 2009, thoroughly irritated American conservatives. In it the pope made clear his opposition to abortion. But his emphasis was on global poverty and inequality. Many American conservatives thought it far too critical of free markets and capitalism.

Other things being equal, Francis's even greater emphasis on themes such as poverty should mean he is yet more respected outside the rich world. But his apparent ambiguity on some issues clashes with a desire for clear doctrinal guidelines in much of the rest of the world.

In this respect, Francis's home continent of Latin America, home to around a third of the world's baptised Catholics, is the in-between continent. Not quite a part of the rich world, it increasingly resembles western Europe in the secularisation of its Catholic population. In 1995, 80% of people in Latin America identified as Catholics. Today, only 56% do. And Latin America's Catholics are not as conservative as is often assumed. A survey soon after Francis became pope found that Africans and Asians were more traditional in matters of doctrine. Many Latin American Catholics were more likely to endorse same-sex marriage than those in Italy or Poland.

All this will have a bearing on the election of Francis's successor. Though most of the cardinal-electors will owe their position to the current pope, many will be more in tune with the thinking of the previous one. The next conclave, moreover, will teem with cardinals who, like Francis, are drawn not from the Vatican but from the pastoral periphery. Most are strangers to one another, thus more susceptible to the influence of a punchy lobby. Benedict is dead. But it is far too early to write off the brand of Catholicism he embodied. ■



Obituary: Pope Benedict XVI

Joy and severity

Joseph Ratzinger, later Pope Benedict XVI, died on December 31st, aged 95

PATTERING IN THE forceful, tumultuous wake of John Paul II, Benedict XVI had a hard act to follow. In 2005 there were few expectations. Or rather, there were expectations of the wrong kind: that the man who from 1981 had been prefect of the Congregation for the Doctrine of the Faith (CDF) would rule the Roman Catholic church like an elderly headmaster, waspish and intolerant, with the fires of a new Inquisition gleaming in those pale blue eyes.

Where John Paul's Polishness was refreshing, Joseph Ratzinger's Germanness worried people. As a boy in deeply Catholic Bavaria he had been conscripted into the Hitlerjugend and briefly trained for the disintegrating Wehrmacht; after that his life had been the seminary, the professoriat, the faculty of theology at Regensburg, the College of Cardinals. He was surely so academic that he would not warm to the pastoral, crowd-pleasing side of the pontificate; he was surely so schooled in youth to heel-clicking obedience that any stirrings of liberalism in the church would be crushed beneath his elegant fist.

But just as his predecessor had possessed, behind the warm gregariousness, a carapace of cold steel, so "Rottweiler" Benedict in the holiest office showed a surprisingly soft, even timid, side. He was dotty about cats, caressing the strays of Rome and chatting to them in German. He adored playing Mozart on the piano, and on warm summer evenings at the papal retreat of Castel Gandolfo would serenade locals out of the open windows. His Bavarian roots survived in a liking for potato dumplings and sausage. Fashion-conscious almost to foppishness, he ordered gold-woven robes in the style last worn by Paul V, the Borghese pope, and liked to sport red Gucci slippers under his pure white robes.

The now-required papal globetrotting tired out this man, who had prayed to hide away in the Vatican Library before the white mantle fell on him; and his radical, solitary decision to retire in February 2013, the first by a pope for 600 years, proved how tough he found the job. But there was a certain simple sweetness in his manner which made young people like him, and put Queen Elizabeth, head of the Church of England, almost at ease with papistry when he stayed with her in 2010 at Holyroodhouse. He taught that the essence of Christianity was pure joy, the joy that God's love is unfailing, like the song of the lark he heard singing from the altar at the moment he was ordained, in June 1951. His first encyclical, *Deus Caritas Est*, was all about that love, the *eros* and *agape* of man for God and God for man; and he once remarked to journalists that maybe humans, like angels, could fly a bit, if they didn't take themselves too seriously.

Apologies he found harder. The world seemed to expect them of him, though: an apology to the Jews for the Vatican's apparent indifference to the Holocaust, and another to the thousands of victims of paedophile priests in Europe and North America. He said sorry in his own way, in institutional words. A general prayer for peace in the Middle East was pushed between the blocks of the Wailing Wall in Jerusalem. In Malta he wept for abused children the sincere tears of an old man who felt that the activities of errant priests had "left a stain" and "filth" on the church. But in his prime at the CDF, where he had energetically persuaded John Paul II to let him deal with such cases, he had written letters recommending that offenders should be moved to other parishes, and any internal investigations kept quiet.

His probing intelligence, which shone through in his encyclicals, sometimes got him into trouble. In a lecture at Regensburg in 2006, calling for dialogue between faith and reason, he remarked that Muhammad had brought into the world only "things evil and inhuman"; the press chose not to notice that this was a quotation from 14th-century Byzantium. Hunched in his study, he often seemed wilfully bereft of media advisers and in contact only with austere, pure, complex minds like his own.

Those minds were conservative. He had followed the reformers within the church for a time, and knew Hans Küng, the most famous liberal theologian, at Tübingen; but the tumult of the 1960s traumatised him. His post at the CDF required him to squash heresy and reassert doctrine, and he did so. A whirl of excitement erupted in 2010 when he let slip, in the course of a six-hour interview with Peter Seewald, a German journalist, that the use of condoms against AIDS might be "a step on the way to another, more humane sexuality". It was a solitary blip in an unswerving message, that condoms made AIDS worse. This, after all, was the pope who two years earlier had issued a letter allowing a more general use of the old Tridentine rite (complete with anti-Semitism), in which priests turned their backs on the congregation and the faithful knew their place. Catholics had been wrong, he wrote, to assume that the Second Vatican Council of 1962-65 had authorised creativity, in liturgy or in anything else.

Just up the hill

During the pontificate of his passionately reformist successor, Francis, he kept largely out of sight in the convent where he lived, just up the hill. He seemed to adjust happily to his unprecedented emeritus role, though he would rather have been plain "Father Benedict"; he liked Francis's company and never openly contradicted him, telling rare interviewers that they were in perfect agreement on everything. The same was not true of the courtiers around him, a "Regensburg network" of conservatives and traditionalists, in close touch with right-wing American media, who saw him as the touchstone of their plotting and resistance. In Benedict, and in his past pronouncements, they saw a means to save the church from novelty and heresy.

He was by then far too old and frail for such a role, even if he had wanted it. He almost certainly did not. But there was no doubt that this was a man for whom relativism was the greatest evil in the modern world, and doctrinal rectitude the surest guard against it. And no one should have been surprised at that. ■



The North Sea economy

Europe's new powerhouse

ESBJERG AND WILHELMSHAVEN

Can the old continent's most turbulent body of water give it a second wind?

PICTURE A MECCANO set, but one made for gods. Blades as long as Big Ben is tall, rotors and tower sections the size of school buildings, shafts and generators so heavy they must be rotated every 20 minutes so as not to be crushed by their own weight: all these parts are strewn across an area the size of 150 football pitches. Clicked together, they form edifices rivalling the Eiffel Tower, except more useful—wind turbines to be planted somewhere in the North Sea.

Welcome to Esbjerg, the hub of Europe's offshore-wind industry. Two-thirds of the turbines currently spinning off Europe's coast, enough to power 40m homes, were put together in the Danish port town of 72,000 people. And Esbjerg's gods have only started tinkering. The city's port operator plans to nearly triple capacity to handle wind projects by 2026. Local engineering firms that once served the fossil-fuel industry now supply the wind-power sector instead. Meta has bought 212 hectares of farmland outside Esbjerg to build a renewables-powered data centre for its social networks. Out on the sea, cables that will ferry 30% of the international data traffic into Norway are being laid. Esbjerg's mayor has travelled as far as Vietnam and Washington to share its success story.

With a dose of strategic thinking, and a bit of luck, a string of Esbjergs could scale up into a new North Sea economy. This would help Europe meet its ambitious climate goals and rebalance its energy sources away from countries ruled by tyrants such as Russia's Vladimir Putin. Its newly minted corporate champions could offer Europe's best, and perhaps last, chance to stay globally relevant. And it could alter the continent's political and economic balance by creating an alternative to the sputtering Franco-German engine.

The North Sea has always been economically significant. Bordered by six countries—Belgium, Britain, Denmark, Germany, the Netherlands and Norway—it is where many important shipping routes intersect. Its strong tides, which sweep nutrients to its shallow seabed, are a boon for fishermen. In the 20th century oil and gas were discovered beneath its floor. At their peak in the 1990s Britain and Norway, the two largest North Sea producers, together cranked out 6m barrels of crude a day, half as much again as the United Arab Emirates does today. One Scottish field, Brent, lent its name to the global price benchmark. As that bounty runs out—and demand for what remains dwindles amid concerns about climate change—the turbulent body of water is finding lucrative new uses.

The biggest bet is on a resource of which the sea has an infinite amount—awful weather. With average wind speeds of ten metres per second, the basin is one of the gustiest in the world. The day your correspondent visited Esbjerg speeds were twice that, enough to push the wholesale price of electricity down to nearly zero. The North Sea floor is mostly soft, which makes it easier to fix turbines to the seabed (the floating kind have yet to be deployed at ▸▸

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scale anywhere in the world). It is also typically no more than 90 metres deep, which allows wind farms to be placed farther away from the coast, where winds are more consistent. Ed Northam of Macquarie Group, an investment firm with stakes in 40% of all British offshore wind farms in operation, says his offshore turbines work at up to 60% of capacity, compared with the 30-40% that is typical onshore.

In 2022 North Sea countries auctioned off 25 gigawatts (GW) in wind-power capacity, making it the busiest year by far. Nearly 30GW-worth of tenders have already been scheduled for the next three years. Annual new connections are expected to grow from under 4GW today to more than 10GW by the late 2020s. At a meeting in Esbjerg in May the European Commission and four North Sea countries agreed to install 150GW by 2050, five times Europe's and three times the world's current total. In September this group and another five countries raised the number to 260GW, equivalent to 24,000 of today's largest turbines.

This ambition is made possible by wind's version of Moore's law, which described the exponential rise in computing power. Three decades ago the world's first offshore wind farm—Vindeby in Denmark, comprising 11 turbines—had a total capacity of five megawatts (MW). Today a single turbine can generate 14MW, and one farm may contain more than 100 of them. More robust cables and transformers at sea to convert wind power from alternating into direct current, which can travel over long distances without big losses, enable more electricity to be generated farther away.

The result is that several wind farms being installed surpass 1GW in capacity, the typical output of a nuclear plant. The one at Dogger Bank, between 130km and 200km off the British coast and due to come online this summer, will clock in at a record 3.6GW at full capacity in 2026. Economies of scale are driving down costs, making offshore wind competitive with other sources of power. In July Britain awarded contracts to five projects, including Dogger Bank, at a price of £37 ($44) per megawatt-hour—less than a sixth of the British wholesale electricity price in December.

The bad weather is not always a boon: its vagaries can also stress the grid. Helpfully, technology and falling costs are allowing wind-power operators to combat the elements. One way to do this is with more interconnections, first between the farms and land—today most wind farms have one link to the shore, which is inefficient—and then among the farms themselves. Half of the 3GW to be tendered by Norway will have the option to create links to more countries. Phil Sandy of National Grid, which runs Britain's power infrastructure, predicts a future of complex undersea grids similar to that on land.

Another way to manage the variability of wind power is to use it to split water molecules to produce "green" fuels, such as hydrogen and ammonia. In May the European Commission and heavy-industry bosses pledged a ten-fold increase of EU manufacturing capacity for electrolysers, which do the splitting, by 2025. This would allow it to produce 10m tonnes of green fuels by 2030. The commission has also proposed a "hydrogen bank", capitalised with €3bn ($3.2bn), to help finance the projects.

Investors are giddy. In August Copenhagen Infrastructure Partners (CIP), a private-equity firm, said it had raised €3bn for a fund that will invest solely in hydrogen assets. A dozen projects have been announced in Europe; the three largest add up to 20GW of green power. Topsoe, a Danish firm that provides technology for such ventures, says its orders amount to 86GW.

Eventually the North Sea's power system could take the form of an archipelago of "energy islands" that host wind-farm repair staff, aggregate electricity and produce hydrogen to be transported onshore by ship or pipeline. Up to ten such schemes are being considered, according to SINTEF, a research firm. North Sea Energy Island, an artificial atoll 100km off the Danish coast, is due to be tendered in 2023. It will act as a hub for ten nearby wind farms, with links to neighbouring countries.

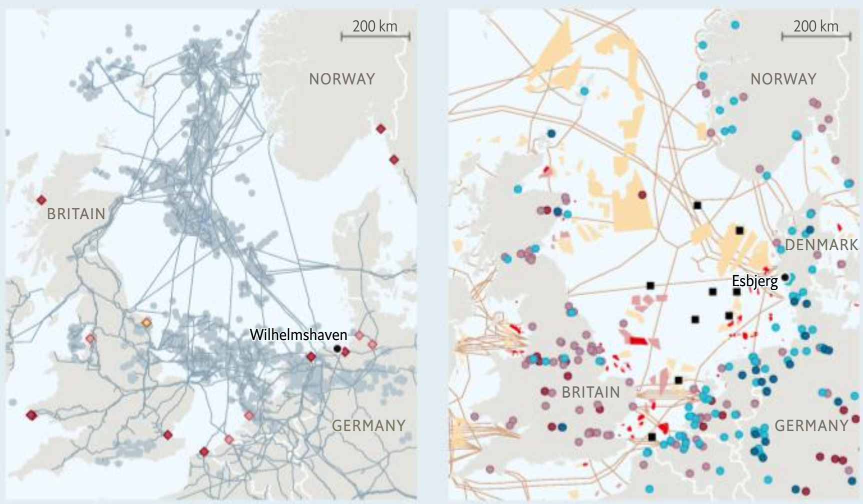
One bidder, a joint venture between Orsted, a Danish offshore-wind developer that is the world's largest, and ATP, a big local pension fund, envisages a modular design, with components made onshore and assembled at sea. "We expect it to still be functional in 100 years' time," says Brendan Bradley of Arup, an engineering firm that is advising the bid. Thomas Dalsgaard of CIP, which is part of a rival consortium, reckons that producing green fuels offshore will not only help reduce pressure on grids but also save money: hydrogen pipelines are one-fifth the cost of high-capacity power-transmission lines.

And there is more to the new North Sea economy than the energy sector. Electricity and hydrogen will not be the only things to course across the sea floor. So will carbon dioxide. Some industries, such as cement-making or chemicals, are hard to decarbonise. But their CO_2 can be collected and pumped into depleted gasfields in the North Sea. Such carbon capture and storage (CCS) used to seem an unappealing way to fight climate change, because of its high cost and unpopularity among environmentalists, who worry it could prolong the life of fossil fuels. Now, as with wind, the costs are falling, political resistance easing and projects multiplying.

One seeking approval in Rotterdam, called Porthos, would connect Europe's

Sea change

'Old' North Sea energy infrastructure | 'New' North Sea energy infrastructure



Oil and gas pipelines* · Oil- and gasfields

LNG import terminals
Operating · Under construction or planned · Speculative

Offshore wind farms
Operating · In progress or application · Concept or development/auction areas

Hydrogen-electrolyser projects
Operating · In progress or application

Carbon-capture projects
Operating · Under development or planned

Submarine cables* · Energy islands† (planned)

*Operating, under construction or planned
†To host wind-farm repair staff, aggregate electricity and produce hydrogen in bulk
Sources: Rystad Energy; SINTEF; TeleGeography



The building blocks of a new economy

biggest port via a pipeline to a compressor station, and then out to an empty offshore gasfield. Although a court recently delayed its start, the project has received the green light from Dutch regulators. Once operational, it would take in some 2.5m tonnes of CO_2 annually for 15 years, nearly 2% of Dutch emissions. The port of Amsterdam is planning something similar. Farther north, near the Norwegian city of Bergen, Equinor, an energy firm, and its partners have finished drilling operations for a CO_2 injection well as part of a project called Northern Lights. According to Guloren Turan of the Global CCS Institute, a think-tank, Europe now has more than 70 such facilities in various stages of development.

Another valuable product criss-crossing the North Sea is information. If you follow one of the newer transatlantic submarine data cables that land in Esbjerg, called Havfrue, and then turn right at a fork in the middle of the North Sea, you end up in Kristiansand, a city in southern Norway. It is the home of N01 Campus, the "world's largest data-centre campus powered by 100% green energy", according to its owner, Bulk Infrastructure. "We want to build a platform for sustainable digital services," says Peder Naerbo, the firm's founder.

North Sea countries are an excellent place to store and process data. Low electricity prices make for cheaper number-crunching, which is energy-intensive. A cold climate means data centres can be cooled just by circulating outside air instead of using costly cooling systems. The region boasts a highly skilled workforce, stable institutions and some of the world's most enlightened data laws. Latency, the time it takes to move data in and out of the computing clouds, is becoming less of a problem as the technology improves, so digital workloads can be processed in ever more far-flung facilities. And data centres are hitting limits elsewhere in Europe. In 2021 Irish data centres and other digital uses consumed 17% of the country's power. To prevent blackouts, EirGrid, a state-owned Irish utility, will no longer supply electricity to new server farms.

According to TeleGeography, a data firm, 13 new cables have been installed in the North Sea since 2020, compared with five in all of the 2010s. Data centres, too, are springing up, as big cloud providers vow to decarbonise their supply chains. Amazon Web Services (AWS) and Microsoft Azure, the two largest cloud companies, have built server farms in the Nordics. Meta has its plot outside Esbjerg. Older industries are also moving more of their computing north. Mercedes-Benz and Volkswagen have computers sitting in former mines in Norway, simulating wind-tunnel and crash tests for their cars. On average, estimates Altman Solon, a consultancy, demand for data centres in the region will grow by 17% a year until 2030.

Go north, old industrialist

More European economic activity could be drawn north. "Abundance of energy tends to attract industry," says Nikolaus Wolf, an economic historian at Humboldt University in Berlin. That is what happened in the early 19th century, when abundant hydropower helped attract the cotton industry to Lancashire. Mr Wolf and Nicholas Crafts of the University of Warwick calculate that if Lancashire had 10% less hydropower it would also have had 10% less textile employment by 1838 in key places.

Energy is easier to distribute via grids and pipelines today than it was in the Industrial Revolution, and existing industrial centres across Europe exert their own pull. Transplanting cement-making kilns to North Sea shores would mean transporting limestone there and cement back to customers, making the process uneconomic (and, until the advent of zero-emissions lorries, climate-unfriendly). Giant steam crackers, which split hydrocarbons into smaller molecules at chemical factories, won't be moving north soon, either: they are too big an investment, too integrated in existing supply chains, and already in the process of being electrified.

But Mr Wolf's principle still holds for some industries—and may benefit other northerly locations not directly on the North Sea. In Narvik, farther north on the Norwegian Sea, Aker Horizons, a firm that invests in renewable energy, wants to establish a green industrial hub powered by offshore wind. In Boden, a Swedish town near the eastern coast of the Scandinavian Peninsula, H2 Green Steel is erecting a new steel mill, Europe's first in half a century. The factory will run not on coal or natural gas but on green hydrogen, created in one of the world's largest electrolysis plants using onshore wind and hydroelectric power.

Besides exporting steel, H2 Green Steel hopes to export sponge iron, an intermediate product which accounts for much of the total energy used in steelmaking. This would amount to splitting the steel industry in two, explains Henrik Henriksson, the firm's boss. The energy-intensive bits of the process would migrate to where they can be done most efficiently: right next to the sources of renewable energy. The more labour- and knowledge-intensive parts could remain in Europe's steelmaking heartlands, like the Ruhr valley.

In Wilhelmshaven, a German coastal city, Uniper, a state-owned energy company, has just completed Germany's first import terminal for liquefied natural gas (LNG), to replace some of the Russian gas no longer flowing through pipelines from Siberia. The firm plans to erect crackers to produce hydrogen from ammonia next to the LNG terminal. In another corner of the port, close to a decommissioned coal plant, Uniper will build a hydrogen plant and provide space for energy-hungry businesses. "Wilhelmshaven will play an important role as the place where green energy comes onshore," says Holger Kreetz, who is in charge of managing Uniper's assets.

Others flocking north include makers of electric-vehicle batteries, which also require lots of energy to produce, and manufacturers of wind turbines, hit by supply-chain snarls. Vestas, the world's biggest turbine-maker, is closing a factory in China and opening one in Poland, in part to be close to a new wind farm on the Baltic Sea.

As with all such shifts, some see problems. Renewable energy will be even cheaper elsewhere, warns Christer Tryggestad of McKinsey, another consultancy. Rather than investing in and around the

North Sea, firms could move to sun-kissed places such as the Middle East or Spain. Not everyone is convinced that the EU can meet its ambitious goals to ramp up the production of offshore wind power. Vestas and its fellow turbine-makers are already complaining bitterly that permits for new wind parks can take a decade or more to secure. The offshore-wind-services firms warn that they may soon run out of people and machinery to keep customers happy.

The last obstacle comes from across the Atlantic. President Joe Biden's Inflation Reduction Act includes $370bn in subsidies and tax credits for climate-friendly products and services, so long as they are made in America. The EU worries that the handouts will lure investors away from its shores. The bloc is looking into whether the law breaches international trade rules.

If these problems can be overcome, the new North Sea economy's impact on the continent will be momentous. As Europe's economic epicentre moves north, so will its political one, predicts Frank Peter of Agora Energiewende, a German think-tank. This could shift the balance of power within littoral countries. Coastal Bremen, one of Germany's poorest states, could gain clout at the expense of rich but land-locked Bavaria. At the European level, France and Germany, whose industrial might underpinned the European Coal and Steel Community, the EU's forebear, may lose some influence to a new bloc led by Denmark, the Netherlands and, outside the EU, Britain and Norway. The French and Bavarians may bristle at the idea of a de facto Wind-power and Hydrogen Community centred on the North Sea. But it would give Europe as a whole a much-needed economic and geopolitical boost. ■

Bartleby New year, new you



How to have the most productive working day of your life

IT'S THE first full working week of 2023. You have two new year's resolutions. First, to turn yourself into a humming machine of productivity. No more procrastinating, no more afternoon naps. Second, to maximise your own sense of well-being. A few days in, and your daily journal bears witness to a changed person, a model of self-caring efficiency.

07:00 Go to the gym. Leave phone at home. *Mens sana in corpore sano*.

08:00 Tell au pair to wake children, and to keep them out of your way.

08:15 Listen briefly to the call of a whale on Spotify. Shower. Dress.

08:30 Eat something with chia seeds.

08:40 Remove chia seeds from teeth.

08:58 Enter home office. Great sense of wellness. Never felt weller.

09:00 Turn phone off aeroplane mode and fire up laptop. Phone goes mad: missed calls, Slack messages, texts. Precisely where the day went wrong in the bad old days of 2022. Use new batching technique: respond to the oldest five emails and ignore everything else. Turn notifications off again.

09:30 Make a list of tasks that need to be completed today. Colour-code those tasks according to priority. Chunk each of the high-priority tasks into discrete segments. Use combination of time-boxing and Pomodoro techniques to put them into the calendar for the day ahead.

10:30 Calendar for the day is now complete. Very full few hours ahead. Get up and go for a walk around the block to avoid musculoskeletal problems. Every so often stop and look 20 yards into the distance to maintain eye health. See friend on street.

11:30 Back at desk. Decide to find a "Study with Me" video, a recording of someone else working at their desk, as extra motivation for the day to come. Very effective technique, just need to choose the right recording. Might have one with rain pattering on the windows. Or a cat sleeping. Or logs on a fire.

12:00 "Study with Me" recording is now playing. Went with the cats. Day is slightly off-track now. Begin first 25-minute Pomodoro session.

12:25 Excellent session. Get up. Stretch.

12:30 Second Pomodoro session begins. Lasers are less focused than me.

12:40 Extremely bored. Try to get onto Wordle but have installed blocker on laptop that means I cannot use the site until 18:00. Only way around this is to change the time on the computer. Not sure how to do this but it cannot be that hard.

13:30 It is quite hard. But Wordle is done (in four tries!). Clock on computer is now totally wrong; saying it is 2024. Just need to change it back.

14:00 No time for second email-batching session. Lunch and well-being hour begins an hour late. Make open sandwich with rye bread, salmon, dill. Use stacked-habits advice to do two mindfulness exercises at once: self-administer head massage while listening to soundtrack of grasshopper noises.



15:00 Activating hermit mode. Ditch Pomodoro technique: need to get at least two hours done before final email-batching session. Use timer tab to set countdown clock going on my browser.

15:30 Not made great progress. Feeling a bit worthless. Open the compliments folder in my email inbox to remind myself of praise I have received from colleagues in the past.

15:45 Starting to feel a bit panicky. As last resort use "Write or Die", an old program that starts deleting your work if you have not met targets for word count. Helps just to get something on the page.

16:15 FFS. Child came in with something hairy (a rat? someone else's hair?) glued to her hand. By the time I had shooed her out, "Write or Die" had erased most of what I had got done.

17:00 Have used child's stencil set to make a very professional poster that says "Do not enter: I am working". I will paste it on my door here. Good to get this done. Need a pick-me-up, so am going to attend laughter-therapy session that the company has been advertising.

17:30 Couldn't get sound to work for some reason. Everyone looked completely mad on the laughter-therapy thing. Have logged the problem with IT.

17:45 Third (well, second) email-batching session begins. Notifications back on, and email opened. Torrent of messages. Four calls from my boss. Hard to tell what is going on, but everyone seems upset that I have been consciously prioritising work. Typical.

18:00 Ring boss. I have until 9am tomorrow morning to get something done for a new client. Feel much better. If only people could just set me an urgent deadline every day.

Indian drugmakers

A bitter syrup

MUMBAI

The world's pharmacy faces fresh accusations of corner-cutting

IT IS THE stuff of parental nightmares. Between July and October 70 children in Gambia died of kidney failure. In December 18 perished in Uzbekistan from renal problems and acute respiratory disease. In both cases Indian-made cough syrups may have been at fault, according to allegations by a Gambian parliamentary committee and the Uzbek authorities.

The manufacturer in the Uzbek case, Marion Biotech, has been suspended from Pharmexcil, an Indian government-linked trade group that plays a role in pharmaceutical exports; the firm's website appears to be down. An executive for Maiden Pharma, which produced the medicine used in Gambia, told an Indian newspaper that the company was shocked and saddened by the deaths. The firm posted a report on its Facebook page claiming that a government drug-testing lab in India had found its syrup to be problem-free; unpersuaded Gambian parliamentarians recommended that Maiden should be prosecuted. Neither firm responded to *The Economist*'s requests for comment.

Both companies are small and privately held. A causal link between their products and the deaths has not been proved. Sample tests in India have so far cleared Maiden of blame; an investigation of Marion has just begun. Yet the incidents have touched a raw nerve in India's vast pharmaceutical industry, where around 10,000 factories operated by 3,000 firms churn out nearly $50bn-worth of drugs a year, accounting for 20% of the world's and 40% of America's generics supply by value.

The world's pharmacy, as India's drugmakers like to call themselves, is no stranger to scandal. In 2022 America's Food and Drug Administration issued "import alerts" to four large Indian companies. Such notifications, which usually follow inspections of foreign factories, could lead to exports to America being blocked without physical evidence that a particular shipment is bad.

Concerns about corner-cutting and poor quality control are the long-standing flip-side of the rock-bottom prices that have fuelled the industry's rise in India in the past few decades. In a new book, "The Truth Pill: The Myth of Drug Regulation in India", Dinesh Singh Thakur, a former industry executive, and Prashant Reddy, a lawyer, document at least five cases of dangerous medications entering the market, each causing multiple fatalities, since the 1970s. In many more instances shabby manufacturing methods could lead to medicines that are ineffective. These shortcomings are obscured by a complex and opaque inspection regime, says Mr Reddy. Concerns aired by critics like him and Mr Thakur are often ignored—or met with threatening legal notices from the government for supposedly tarnishing the domestic industry's reputation.

The government's initial response to the latest tragedies has been lethargic and has lacked a detailed public examination of the relevant supply chains, says Mr Reddy. History offers little hope of a swift conclusion. One case in Mumbai, which involved the deaths of 14 people in a big hospital in 1988, is still being litigated. Such foot-dragging risks the lives of more patients. It also ultimately harms India's drugmakers, whose health is inextricably bound up with that of their customers. ■

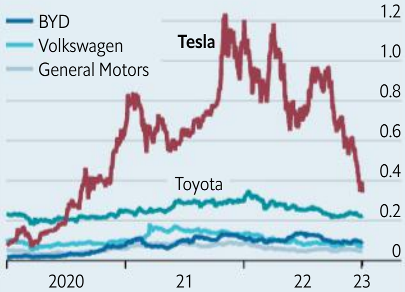
Electric vehicles

The Tesla conundrum

Is Elon Musk's company a tech firm or a carmaker?

AFTER TESLA'S market capitalisation swept past that of Toyota, then the world's most valuable car company, in the summer of 2020, devoted fans and incredulous sceptics deployed a new unit of measurement. As the electric-vehicle (EV) champion's share price rose, its worth was couched in terms of the combined value of the next two, then five, then ten biggest carmakers. A year ago Tesla's market value surpassed $1.2trn, more than most other car companies put together. Since then it has lost 71% of that—a sum exceeding the value of most of the industry. The fortune of its mercurial boss, Elon Musk, has shrivelled by more than $200bn as a result.

The narrowing Musk premium
Market capitalisation, $trn
Selected car manufacturers



Source: Refinitiv Datastream

The latest blow came on January 3rd, after Tesla missed analysts' expectations for deliveries for the third quarter in a row and reported that the gap between production and deliveries had grown, suggesting softening demand for its EVs. It lost 12% of its value—roughly $50bn, or one Ford Motor Company—in a day. Even bullish investors now doubt that Mr Musk will fulfil his promise of making 20m cars a year by 2030, or that Tesla's "Autopilot" is close to becoming a world-changing fully autonomous driving system. Yet the main reason for the market's recalibration of Tesla's prospects is a dawning realisation that the company is chiefly a carmaker—and that its boss is not superhuman.

Mr Musk has always regarded his company as a tech firm, a peer of digital giants like Alphabet, Apple or Meta, not of old-economy metal-bashers such as Toyota or Volkswagen. For a time, so did the market—first as tech shares soared amid the pandemic-era boom in all things digital, then as they slumped last year, after their growth began to slow and higher interest rates made their promised future profits look less valuable today.

In the past few months, however, Tesla's share price has suffered a sharper correction than big tech. This has coincided with its more mundane tribulations as a car business. Having managed to avoid the worst of the pandemic supply-chain disruptions, Tesla has been caught up in China's chaotic retreat from the zero-covid policy; its big factory in Shanghai has been hit by virus-related shutdowns. And having set the course for the industry's EV transition, it now faces plenty of competition from established rivals and a host of newcomers it inspired. Days after Tesla reported the disappointing figures, Volkswagen unveiled its ID.7, a challenger to Tesla's entry-level Model 3 saloon.

EV-buyers, for their part, are becoming less willing than early adopters to overlook Tesla's questionable build quality and the interior of a much cheaper car. And the natural Tesla-owners among the wealthy progressive set are less prepared to overlook Mr Musk's libertarian antics at Twitter, which he bought in October and has mismanaged with gusto—especially now that they have plenty of conscience-salving EV alternatives to choose from.

Tesla is, in other words, no longer the only game in town—and certainly no tech behemoth. As EV-makers go, though, it still looks impressive. In 2022 it delivered 1.3m cars, 40% more than the year before, and opened two new assembly plants. It is working on a smaller, cheaper car and this year will start to deliver its long-awaited Cybertruck pick-up. And it is still worth some $360bn—about as much as the next three biggest carmakers combined. ■

Schumpeter | How to avoid flight chaos

Lessons from Southwest and Volaris, two successful airlines that ruined the holidays



Many will have seen TV footage of woebegone travellers unable to visit their families during the holidays because of a cyclone-induced meltdown at Southwest Airlines, America's largest domestic carrier. Very few, however, know about the travel hell just south of the border at Tijuana airport, due to fog-induced mayhem at Volaris, a low-cost carrier that is Mexico's largest airline. Your columnist does. He and Mrs Schumpeter spent much of Christmas Eve, Christmas Day and Boxing Day stranded there along with thousands of other travellers, trying to rebook cancelled flights to destinations across Mexico. For most of the time, resignation not rage prevailed. But yuletide cheer did fade when, after standing in line for 11 hours to rebook tickets, people were told by a Volaris representative they were in the wrong queue. At exactly the same moment, the company sent out a seasonal tweet: "The magic of Christmas extends to the whole Volaris family."

The two incidents share many similarities. Both were weather-related. They became critical on the same day, December 23rd, and dragged on through much of the holidays. Their effects were traumatic. According to FlightAware, which tracks airline activity, at its peak Southwest cancelled almost three-quarters of its flights. The thick fog in Tijuana forced Volaris to cancel 45% of flights across its network, hitting its core market—Mexican migrants returning home from America. Both airlines were caught out worse than full-service rivals. United Airlines, for example, cancelled far fewer flights than Southwest, even though both have big presences in Denver and Chicago, where the situation was particularly acute. Unlike Volaris, Aeromexico, a legacy Mexican carrier, immediately resumed flights from Tijuana when the fog lifted.

So what can be learned from the mishaps—and how can they be avoided in the future? In Southwest's case, much of the attention has focused on its outdated technology, some of which its new CEO, Bob Jordan, had promised in early December to upgrade. But the airline industry is also human. When it stops working, it becomes all too clear how important it is that pilots, flight attendants, mechanics and ground staff are in the right place at the right time. An interview with Enrique Beltranena, boss of Volaris, provides a reminder that human problems can be at least as difficult to solve as technological ones.

He starts with both a *mea culpa* and an excuse. In America and Mexico the weather problems occurred at Christmas when airlines are particularly reluctant to cancel flights because of the emotional toll on passengers. "We probably took too much time before biting the bullet and really cancelling what we had to cancel," he admits. For Southwest and Volaris, this was a particular problem because both airlines mostly fly point to point—in other words, their planes hopscotch from one airport to the next—rather than returning to a hub, as do legacy carriers. The point-to-point model made famous by Southwest has many advantages. Planes make their money in the air, not sitting on the tarmac. A Volaris aircraft, for example, flies on average to more than five different airports in a single day. But when problems arise, it is easier to send planes from a hub to rescue stranded passengers, rather than rerouting flights from myriad airports. It is also easier to find spare—and rested—crew members.

As Mr Beltranena explains, to stop a problem snowballing into a crisis, you need to pre-emptively scrap flights in order to quickly reroute aircraft as backup. Pre-emptive cancellation is a tough choice, though. Henry Harteveldt, president of Atmosphere Research Group, a consultancy, likens it to deciding "which one of my children am I going to throw out of the aircraft". Both Southwest and Volaris failed to do it swiftly enough to safeguard their wider networks. You can see the cascading problems at Southwest in FlightAware's data. They show it barely scrapping any flights in the days before the storm, and then cancellations soaring from 33% of its flights on December 23rd to 74% three days later. "Southwest came as close to doing a full airline reboot as I've ever seen," says Kathleen Bangs of FlightAware. A few days later Volaris took similarly drastic measures. "We basically restarted the entire process," Mr Beltranena says.

The next problem was on the ground. Passengers pleaded for their suitcases. But ground staff are also human. In Denver some failed to show up for work. In Tijuana, Mr Beltranena says baggage handlers put in so much overtime that they were exhausted by the time they started a new shift. Moreover, as passengers tried to rebook flights, there was a chronic lack of communication. A handful of Volaris staff were unable to handle the thousands of stranded passengers in Tijuana, and the airline's call centre made things worse by promising to rebook passengers on flights that no longer existed. The answer, Mr Beltranena believes, will be to increase staffing, even if that leads to spare capacity in normal times.

The biggest reboot will be to IT systems. Southwest's crew-management technology has failed to keep pace with the airline's increasingly complex network. Volaris's, too, clearly let it down. Jahan Alamzad of CA Advisors, a consultancy, says the problem is that airlines have focused on creating attractive customer-facing applications, such as booking systems, while back-end ones such as those keeping track of planes, crews, maintenance and weather operate in silos. In order to reroute planes and crews in times of stress, it is important to have the complete picture in real time.

Brace position

New IT infrastructure is hard to install. Airlines cannot rip out the old and put in the new. Systems must be integrated. There is also widespread fear of hacking. Yet the biggest hurdle is probably, again, a human one. Airlines like Southwest and Volaris think they are exceptional. They have grown so fast that they risk becoming complacent. Freak weather may, as Mr Beltranena puts it, be an act of God. But there is no excuse not to prepare for the worst. ■



The end of zero-covid

Back with a bang

What the great reopening means for China—and the world

When its borders open on January 8th, China will have spent 1,016 days closed to the outside world. The country's "zero-covid" policy has been a social and economic experiment without precedent: a vast public-health campaign that mostly kept the disease at bay; Xi Jinping's pride and joy; and, by the end, a waking nightmare for many of China's 1.4bn people.

Armies in white hazmat suits have been deployed to collect tens of billions of throat and nasal swabs. Millions were quarantined or hauled off to fever camps, often arbitrarily. Fear of isolation sent people fleeing from offices and factories where cases were found. Amateur videos captured residents leaping to their deaths from apartment blocks after weeks of seclusion. In major cities daily life stood still for months on end. A cosmopolitan class of young, wealthy Chinese was forced to come to grips with a life without international travel. Foreign entrepreneurs and executives were barred from returning to their homes and businesses in the country.

Before vaccines were widely available, officials could argue this approach was needed to save lives. By the end, the experiment offered a bleak existence at an extraordinary cost. China's economy probably grew by less than 3% in 2022. Over the past 18 months, it has forgone about $1trn-worth of GDP, according to Oxford Economics, a research firm, compared with what it would have produced had its reopening resembled the rest of the world's. Restrictions on movement snarled the most advanced global supply chains. In November profits at industrial firms dropped by 9% year on year. Meanwhile, exchanges between China and the outside world fell to their lowest in decades. Few foreign students remain. Overseas tourism has collapsed. Mr Xi has only recently resumed foreign travel after remaining in China for two-and-a-half years.

→ Also in this section

55 Imagine India without hawkers

55 Sam Bankman-Fried pleads not guilty

56 Buttonwood: How bad will 2023 be?

— Free exchange is away

Zero-covid lasted longer than anyone initially expected, then collapsed faster than anyone could have imagined. In a matter of weeks China has gone from some of the world's strictest restrictions to almost none. For the population at large, fear of lockdowns and quarantine has vanished. Following a period of turbulence, economic activity is likely to rebound sharply. Increased demand for energy and commodities will be felt around the world. Investors and multinational executives will soon be able to visit offices and factories. The great reconnecting of China with the outside world marks the end of an era: that of the global pandemic.

Normality will not arrive immediately. According to one estimate, 37m people a day are catching covid. Hospitals are overwhelmed. So are crematoria. Officials acknowledge few deaths—and face an immense challenge keeping production lines running. Tesla, a carmaker, halted operations at its factory in Shanghai on December 24th. Local officials may seal off towns to keep cases down, worries an executive. The economy could contract in the first three months of opening up, says Tommy Wu of Commerzbank. But the recovery will arrive earlier than analysts had expected. ▸▸

Many think the period of volatility will draw to a close by the end of March. At that point, a recovery will begin that should gain strength as the year progresses.

Li Pengfei, until recently a product manager at an industrial-software firm in Beijing, is among those desperate for a return to normality. Mr Li lost his job in February when restrictions made basic duties, such as travelling to meet clients, near-impossible. He spent part of last year living with his sister, but was forced to return home to Jilin province in China's far north-east, where economic prospects were dismal even before the pandemic. "Things seem so volatile that even the big companies are downsizing," he says.

Elsewhere in the world bosses worry about a "great resignation", with workers quitting jobs or dropping out of the labour force altogether. This is less of a concern in China. The government did not hand out stimulus cheques willy-nilly, as America's did, during the pandemic. People who lost jobs, such as Mr Li, will return to work when the opportunity arises, economists believe, helping to steady factory output.

Xi's spending spree

Consumption will rise, too. Incomes have fallen, but zero-covid also squashed spending, as people avoided travelling and eating out. All told, households saved one-third of their income last year. Many will be getting back on their feet after job losses, stagnating pay and declines in the value of their homes, meaning the splurge will be limited. But Jacqueline Rong of BNP Paribas, a bank, reckons household consumption will grow by about 9% in 2023—a big improvement on the previous year's growth rate, if not full retribution for the enforced abstemiousness of recent years.

Reopening will also benefit China's troubled property sector, though quite how much depends on political decisions. In November, as covid restrictions were relaxed, policymakers eased property developers' access to financing. This should help stronger firms avoid default and at last finish building flats they have already sold to homebuyers. At China's Central Economic Work Conference in December, policymakers promised to support "fundamental demand", as opposed to speculative purchases. To that end, they may make further cuts to mortgage rates and down-payment requirements.

Forecasts for the performance of the property sector, broadly defined to include construction, services and furnishings, range widely. Activity in the industry could grow by 3% this year, according to Jing Liu of HSBC, a bank—enough to add 0.9 percentage points to China's GDP growth. A more optimistic scenario has activity expanding by 5%, she thinks, adding 1.5 points to growth. Some households might decide that now is a good time to "buy the dip", before prices revive or regulatory restrictions on home purchases return.

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The boom to come 1

China, GDP, % change on a year earlier



Sources: Haver Analytics; HSBC *Estimate for Q4

The economic implications of reopening extend further afield. Zero-covid kept a lid on China's demand for global goods, services and commodities. During the lockdown of Shanghai in the first half of last year, for instance, the country's oil demand fell by 2m barrels per day. In the past, such drops in Chinese spending would have deprived the world economy of a crucial engine of growth. The covid downturn has been different. It coincided with an overheated economy in America and an interrupted supply of energy across Europe. "At least this time China isn't contributing to inflation," says Louis Kuijs of S&P Global, a rating agency.

China's recovery will lift global growth for the simple reason that the country is a large part of the world economy. HSBC reckons that one year from now, in the first quarter of 2024, China's GDP could be as much as 10% higher than it will be in the first three troubled months of 2023 (see chart 1). According to our rough calculation, a recovering China could account for two-thirds of global growth in that period.

Itchy feet 2

Total estimated effect of China lifting covid-19 restrictions*, % of 2021 GDP



Source: Goldman Sachs *Forecast in December 2022

In time, however, China's recovery may have unfortunate side-effects. In other big economies, the binding constraint on economic expansion is monetary policy, as central banks raise interest rates to suppress inflation. If China's reopening looks like raising global demand and therefore price pressure to an uncomfortable degree, central banks elsewhere may have to respond by tightening policy to offset the threat. In such a scenario, the impact of China's reopening on the rest of the world may show up not in higher growth but in higher inflation or interest rates.

China's most direct channel of influence is through commodities. It consumes almost one-fifth of the world's oil, over half of refined copper, nickel and zinc, and more than three-fifths of iron ore. On November 4th the mere rumour of a reopening caused a 7% increase in the price of copper by the end of the day. As the rumours are realised, China's demand for metals, crops and energy will help exporters of commodities, hurt importers and give the world's central banks another headache in their fight against inflation.

Heavy metal demand

China's appetite for metals remained strong during zero-covid, as the government encouraged spending on electric vehicles, renewable energy and other forms of green infrastructure, all of which require lots of aluminium, copper and other metals. But buyers lacked the confidence to stock up on these materials: inventories of copper fell to their skimpiest in 15 years. Reopening will encourage restocking. In November Goldman Sachs, a bank, reckoned the price of copper would increase to $9,000 per tonne within 12 months. Now it thinks the price will reach $11,000.

Demand for energy proved less resilient, particularly towards the end of zero-covid. China's imports of liquefied natural gas (LNG) fell by about one-fifth in the first 11 months of 2022, compared with the same period of the previous year. This allowed Europe to increase purchases to make up for the loss of Russian gas. Thus China's zero-covid policy acted as a counterweight to Russia's invasion of Ukraine—one blunder helping to save Europe from the other.

Analysts assume a modest rise in Chinese LNG imports this year, based on the contracts buyers have already signed and their reluctance to buy LNG when prices are high. If imports recover faster, Europe could feel the pinch. In a stress test in December the International Energy Agency (IEA), an official forecaster, assumed Chi-

nese demand would increase by about a quarter in the year ahead, returning to 2021 levels; Russia would cut off piped gas to Europe entirely; and winter would start punctually. In such a scenario Europe would face a shortfall of 27bn cubic metres of gas, equivalent to 7% of annual demand, even after its current efforts to increase supply are taken into account. The IEA warns that if nothing else is done, Europe may be forced to introduce rationing.

The impact on oil could also be significant. If China's economy makes a full recovery in 2023, it will gradually increase crude imports throughout the year until it has added an average of 1m barrels a day, reckons Soni Kumari of ANZ, a bank. This will compensate for reduced demand in Europe and America, both of which are courting recession. Indeed, Goldman Sachs forecasts that China's increased appetite could push up oil prices by about $15 per barrel. The price of Brent could exceed $100 again in the third quarter of this year, it reckons, making the global battle against inflation still more difficult.

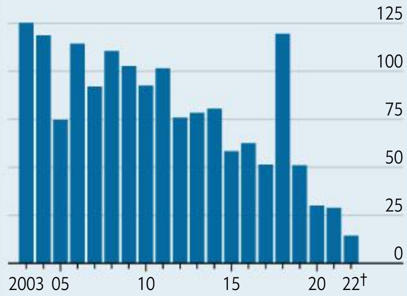
Higher commodity prices will be a boon to exporters like Chile and Brazil, but hurt China's energy-importing neighbours. For India, the loss from higher prices may cancel out gains from increased exports to the mainland. Other countries, more tightly enmeshed in China's manufacturing supply chain, seem better placed to benefit. But raw statistics can be deceptive. Although Taiwan's merchandise exports to the mainland were equivalent to more than 15% of GDP in 2021, many were components for products that are ultimately sold to customers outside China, and may thus be unaffected by the change of policy.

The biggest boost to neighbours will come not from selling goods to China but from selling tourist destinations to Chinese citizens (see chart 2 on previous page). Ni Na, a mother of two from Shanghai, travelled overseas about five times a year pre-pandemic, often spending three or four months a year outside the country. She attempted to travel once within China in 2022, only to give up owing to restrictions. When quarantine requirements are lifted, Ms Ni will get back on the road. She has renewed her passport and her sons' travel documents in anticipation.

Thailand, a popular destination, could enjoy a three-percentage-point boost to growth once China has fully reopened, reckons Goldman Sachs. That would remove the uncertainty weighing on local asset prices, including the currency, says Arup Raha of Oxford Economics, reducing pressure on the central bank to raise rates—welcome freedom in a country where output is still below potential. But the biggest winner will be Hong Kong. Increased exports, which include tourism, could boost its GDP by almost 8% after full

Factories, floored 3

China, announced inward greenfield foreign-direct-investment projects*, $bn



Source: fDi Markets *Includes estimates †To November 30th

reopening. The city used to attract more than 4m mainland visitors a month. Without them, it has felt roomier but poorer.

The Communist Party is deft at rewriting history. Yet Mr Xi will struggle to shake the damage done to his reputation in 2022. The clumsy enforcement of zero-covid, followed by its hasty abandonment, will go down as an error for the ages. Many investment houses adjusted their risk assessments for China, and will allocate less to the country over the next three years unless they are compensated for it. About $18bn of foreign exchange flowed out of China in November, up from $11bn in October. These outflows are expected to reverse when China's economy stabilises in 2023, but a swift return to the type of inflows witnessed before the pandemic is unlikely.

Deep damage has been done to parts of China's supply chain. A covid outbreak, followed by protests, at a plant making Apple's iPhone 14 in central China has delayed orders for the product. For foreign firms, the crisis was the first time that central policy interfered with local officials' commitment to keep factories running. Many companies are now willing to pay more to manufacture elsewhere. Take the process of launching new products, which requires an almost continuous flow of researchers and scientists between headquarters, usually in the West, and plants in China. The covid years made this dance impossible. Engineers stopped visiting; fewer new products were launched in the country. Multinational firms have been forced, often reluctantly, to launch elsewhere.

But after years of zero-covid, bosses have become more comfortable with moving away from China. Inbound investment in new "greenfield" factories has plummeted (see chart 3). At the same time, the number of firms moving operations out of China has jumped, says Alex Bryant of East West Associates, a supply-chain consultant. Most of the moves Mr Bryant's firm has assisted with over the past year have been outbound. He thinks the reopening of China is unlikely to lead to an immediate turnaround in the direction of traffic.

A thousand meetings

Policymakers are waking up to the danger. Officials and businessfolk from Fujian, Guangdong, Sichuan, Zhejiang and elsewhere are planning trips abroad to win back investors, according to a state-media report. "A meeting is worth a thousand emails," it said. In December China's leaders announced a focus on attracting foreign money, emphasising that local governments should prioritise finding investors. Such language has not been used at a Politburo meeting in many years, notes Robin Xing of Morgan Stanley, a bank. "They clearly want to keep their place in the global supply chain," he says. Nevertheless, making up for the chaos of 2022 will require an awful lot of meetings. ■



China's leap forward

Employment

Formalising

MUMBAI

Imagine an India without hawkers



Peddling past

INDIA'S VAST informal economy is both a blessing and a curse. The hundreds of millions who toil in it—without contracts, outside the tax system, often on miserable incomes—are the human engine for the country's farms, hawker stands and rickshaws, providing food, transport and even phone repair and currency exchange. They shape how India looks (the crowded markets), sounds (the buzz of bargaining) and smells (the snack carts lining the roads). And it is the sector's resilience that keeps the country operating even in the most difficult times, soaking up unemployment.

But these sights, sounds and smells may be less pervasive in future, for there are signs that work in India is undergoing a transformation. Data from a range of sources suggest the country's workforce is becoming increasingly formal. In the first half of the India's fiscal year, concluding in September, the number of employees registered with the national pension fund rose by 35%, compared with the same period the year before—a rise equivalent to 9m people. The number of firms paying the goods-and-services tax, an indicator of formal business creation, has risen from 8m to 14m since 2017. Online postings on recruitment sites, such as Monster, suggest a similar rise in formal employment.

The shift is so large and sudden that it has left observers scratching for an explanation. Inevitably, there are quirks in the data. Registration with the pension fund is required for firms with more than 20 employees, meaning an increase of just one person could boost recorded roles by 21—a technicality that may exaggerate swings during an economic upturn. And as it rebounds from covid-19, India's economy is growing quickly. Estimates suggest that GDP rose by around 7% in 2022. Yet quirks can only explain so much. As Rahul Bajoria of Barclays, a bank, notes, the swing is sufficiently big, and appears across such a wide range of indicators, that significant, real-world change is probably afoot.

Payroll data registered with the pension authorities provide insight into the new employees. There are gains in every age group, but the biggest are for people aged 18-to-25, suggesting the additions may come from new jobs, rather than the transfer of old ones to a formal footing. The largest category, accounting for 38% of the new hires, is "expert services", which includes coders and clerks, and reflects the country's growing importance as a destination for technical and back-office services. The second-largest is "cleaning and sweeping services", precisely the kind of jobs that previously would have gone unregistered.

Powerful business trends are likely to explain the shift. India has transformed its financial architecture. A goods-and-services tax introduced in 2017 makes companies pay a tax on purchases that can be offset against sales. Getting this cash back is an incentive to register with the authorities. Meanwhile, a government-backed electronic-payment system has grown quickly since it was set up in 2016. It leaves a trail that can be monitored, reducing evasion.

Multinational giants now account for a greater share of employment—and are not generally the type to dodge taxes. Housing being built near Chennai by Foxconn, a Taiwanese electronics manufacturer, will accommodate more than 60,000 workers. Dixon Technologies, an Indian Foxconn-like subcontractor with dozens of foreign clients, has grown from 1,500 to 20,000 employees in the past five years. The smaller firms servicing such regimented enterprises, from the food consumed by workers to the endless trucks that underpin logistics, must be formal enough to fit into their payment and tracking systems.

The Centre for Monitoring Indian Economy, a research firm, reckons that another factor behind the increase in formal employment is growth in people-heavy industries, notably tourism and hospitality. These increasingly include chains rather than independent guesthouses. It is a boon for the Indian state that more of those working in hotels and restaurants will contribute to the public finances. And it may be a surprise for future holidaymakers when the country that greets them is a little less raucous than it used to be. ■

The FTX blow-up

Whydunnit?

WASHINGTON, DC

As Sam Bankman-Fried pleads not guilty, one big question remains

IN ONE WAY the holiday season in Joseph Bankman and Barbara Fried's house was like many others. Adult children who have fled the nest often return home for the festive period. Their son, Sam Bankman-Fried, the founder of FTX, a now defunct crypto exchange, did the same. He flew to Palo Alto, California, on December 22nd and departed shortly after New Year's Day.

Yet he did so in slightly different circumstances from most. After the collapse of his empire in November, Mr Bankman-Fried was arrested in the Bahamas, before being extradited to New York to face fraud and money-laundering charges. He flew to California on December 22nd only after a judge in the South District court of New York agreed to release him on a $250m "appearance bond", which his parents and two other people agreed to pay if he did not comply with the terms. These require him to appear in court, wear an ankle monitor and live with his parents. On January 3rd he returned to New York—this time to plead not guilty to the various charges he faces.

A provisional date of October 2nd was set for the trial. But it is possible that Mr Bankman-Fried, who continues to claim he did not intentionally defraud anyone, will strike a plea deal. If there is a trial he will face the testimony of his former colleagues: Caroline Ellison, who ran Alameda, the hedge fund Mr Bankman-Fried founded and majority-owned, and Gary Wang, a co-founder of FTX, both of whom are now co-operating with the authorities. On December 21st Ms Ellison pled guilty to seven charges which could carry a maximum sentence of 110 years in prison, including wire fraud and conspiracy to commit money-laundering. Mr Wang, meanwhile, pled guilty to fraud charges which could carry a maximum of 50 years.

The evidence the two provided to prosecutors helped inform the criminal charges against Mr Bankman-Fried and the civil complaints from the Securities and Exchange Commission (SEC) and the Commodities and Futures Trading Commission (CFTC), two regulators. Their submissions suggest that since FTX was set up in 2019, Mr Bankman-Fried improperly channelled customer deposits to Alameda. They also suggest he directed Mr Wang to exempt the hedge fund from important FTX procedures. The rules were designed to ensure that trading positions customers had borrowed money to open were closed if trades ▸▸

moved against them. The exemption allowed Alameda to have a negative balance on the exchange; in other words, it let the firm borrow customers' assets.

In addition, the complaints against Ms Ellison suggest Mr Bankman-Fried instructed his business partner (and former romantic one) to prop up the price of the FTT token. Mr Bankman-Fried had created this cryptocurrency himself, and given it to Alameda for nothing, so that the hedge fund could use it to borrow even more money from other crypto institutions. Having set up ways for Alameda to borrow as much as possible, Mr Bankman-Fried then used the firm as his "piggy-bank", according to the SEC—disbursing donations, buying property and making investments.

Given the amount of information revealed since FTX collapsed, the most interesting question about the demise of the firm and Mr Bankman-Fried's empire is no longer what happened. It is clear that billions of dollars of customers' assets ended up at Alameda, either because they were channelled there directly or because of the special treatment the firm enjoyed. The bigger question, which is still unanswered, is exactly why Mr Bankman-Fried and his colleagues did this.

Mr Bankman-Fried's not-guilty plea prepares the ground for a possible trial that may get observers closer to the answer. Or perhaps the truth will come out by a different route. Another peculiar feature of the holiday period at the Bankman-Fried home is that parents and son were reportedly visited by Michael Lewis. The celebrated journalist has been following Mr Bankman-Fried since the middle of last year for a book. The purpose of his latest visit was, apparently, to discuss the film rights. ■

Buttonwood Once more, with feeling

Investors had an awful time in 2022. This year may be almost as bad

After a nightmarish 2022, shell-shocked investors have losses to recoup and plenty to ponder. There are asset-class allocations to be made, industries to favour or shun and every economic variable under the sun to forecast. Professional money managers have the extra headache of working out how to stop nervous clients racing for the exits. But one question dominates the rest, and it is the impossible one that looms over every crash. Is the worst over?

Economically, there is a clear answer: this year will be grim. Kristalina Georgieva, head of the IMF, warned on January 1st that a third of the global economy is likely to fall into recession in 2023. Downturns have probably already begun in the euro zone and Britain. In a recent poll of economists carried out by the University of Chicago and the *Financial Times*, 85% thought America would follow before the year is out.

This does not guarantee another bloodbath—it could even mean the opposite. In theory, markets are forward-looking, and fears of recession stalked the world for much of 2022. Such a widely held consensus should be baked into today's prices, meaning even a marginally better outlook would buoy prices. Indeed, analysts at JPMorgan Asset Management use the strength of agreement that there will be a recession to argue that stock prices will in fact end 2023 higher than they started. They are not alone in their optimism. Goldman Sachs's researchers think share prices will fall in the near term, but recover by the end of the year. Deutsche Bank's bullish lot reckon the S&P 500 index of large American firms will end the year 17% higher than it now stands.

If this year offers a repeat of 2022, with heavy losses for both stocks and bonds, it will be an unusual one. Stock prices mostly go up. They rarely decline two years in a row. The S&P 500 last did so two decades ago during the bursting of the dotcom bubble. Last year's bond rout was on account of the Federal Reserve raising rates at its fastest pace since the 1980s, which is unlikely to be repeated.

Even so, there are reasons to believe more pain lies ahead. The first is that shares, relative to their underlying earnings, remain expensive by historical standards. Despite last year's plunge, the price-to-earnings ratio for "growth" stocks, those of companies promising big future profits, has fallen back only to where it was in 2019. This was its highest since the global financial crisis of 2007-09, a level which was reached after a decade-long bull market. True, "value" stocks, those with a low price compared with the firm's book assets, look more attractive. But as recession sets in, both types are vulnerable to earnings downgrades that are, for the most part, yet to materialise.

Moreover, today's valuations were reached during an unusual period: one in which central banks pumped endless liquidity into the market via quantitative easing (QE). By buying government bonds with newly created money, the Fed and others depressed yields and nudged investors to seek returns in riskier assets, like stocks. Now these QE programmes are being kicked into reverse. One consequence is that governments will rely much more on private investors to hold their debt. In the fiscal year of 2022-23, America's Treasury may need to borrow almost twice as much from investors as it did during each of the two years preceding the covid-19 pandemic, and four times the average in the five years before that. Even without central banks raising short-term interest rates, this glut could drive bond prices down and yields up. Just as in 2022, stocks would therefore be left looking less attractive by comparison.



The final reason for gloom is a divergence between economists and investors. Although wonks are betting on a recession, many punters still hope one can be avoided. Markets expect the Fed's benchmark rate to hit a peak of below 5% in the first half of this year, before declining. The central bank's governors disagree. They project that the interest rate will end the year above 5%.

Thus investors are betting either that inflation will fall to target more quickly than the Fed expects, or that the monetary guardians do not have the heart to inflict the pain it would take to get it down. There is, of course, a chance they will be proved right. But markets spent much of 2022 underestimating the Fed's hawkishness, only to be put in their place by Jerome Powell, the central bank's governor, at meeting after meeting. If the pattern repeats, 2023 will be another miserable year for investors.



Covid-19

Fail unsafe

Better surveillance, not restrictions on travel, is the way to deal with dangerous covid variants, old and new

JANUARY 5TH was the third anniversary of the day that researchers at the Wuhan Institute of Virology, in China, isolated a coronavirus which had caused a cluster of mysterious pneumonia cases in one of the city's hospitals. This new virus, named SARS-COV-2 by the World Health Organisation (WHO), has subsequently infected most of the world's population. In parts of Europe the percentage of people who have never caught it is probably in single digits.

Vaccines and prior infections have now slowed SARS-COV-2's spread. But it has evolved partial means to evade the immunity they confer. Reinfections have become routine. In light of this, attention has turned once more to China. The country in which covid started has only recently followed the rest of the world by abandoning isolation and lockdowns (see China section). That, combined with its patchy record on vaccination—meaning many Chinese have had no opportunity to acquire immunity from either an infection or a vaccine—has resulted in a surge of cases. And the outside world has responded.

Many countries have increased their testing of arrivals from China. America, Britain, France and Italy, in particular, now require travellers from Chinese airports to produce evidence of a negative covid test. And America, which already gathers swabs anonymously and voluntarily from people arriving from more than 30 countries, in order to monitor variants circulating overseas, is expanding the number of flights per week covered by the programme to 500, including 290 from China.

Most experts question the value of preflight testing. The variants dominant in China are already circulating through the populations of countries requiring it, so Chinese arrivals, these experts reckon, will make little difference. But monitoring is a different matter. That is sensible. One underlying fear is that the end of China's lockdown means a new, resurgent, variant of the virus may evolve and emerge from covid's original homeland. Such fears are not assuaged by the fact that China, though still reporting genomic-sequencing data, no longer publishes numbers of cases, hospital admissions or deaths.

But other countries, too, are doing less than they used to in the matter of monitoring. According to Maria Van Kerkhove of the WHO, the number of SARS-COV-2 sequences submitted to GISAID, an international repository of viral genetic information, has dropped by 90% since the start of 2022, and the number of countries submitting data has also fallen. Official attitudes have, she says, become complacent. The thinking has been that the illness is now milder, that there is nothing more to do and that (events in China notwithstanding) the pandemic is over. But it isn't. Covid still kills 10,000 people a week, and many of those deaths are preventable.

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Network theory

Following the evolution of SARS-COV-2 is the task of networks of laboratories that sequence the genetic makeup of viral samples circulating around the world. When the virus breeds in an infected individual the offspring are not always exact replicas of those from which they are spawned. Spelling mistakes in the genetic code occur routinely during replication. Most of the results are cosmetic, changing a virus's look, but not how it functions. Occasionally, though, alterations occur that dictate how easily it infects human cells, or which types of cell (upper- or lower-respiratory-

tract cells, for example) are most susceptible. With many such changes, a virus may become better at spreading, at making people ill, or both.

If a variant with unusually many mutations is spotted, epidemiologists chime in. They investigate whether places where this particular variant is on the rise are also seeing a faster spread of infections, cases that are more severe, or evidence that covid tests, drugs and vaccines are less effective than elsewhere. If this information suggests existing measures are failing, the new virus is designated a variant of concern (VOC) by the WHO, and is given a name from the Greek alphabet.

Each new VOC has been more transmissible than its predecessors. Delta was, on top of that, more severe. Omicron, the latest, is less severe than Delta. But a future variant might swing the other way again. "There is this notion that the more this virus circulates, the less severe it will become. There is absolutely no guarantee of that," says Dr Van Kerkhove.

Since Omicron emerged in late 2021, no new VOC has been designated. New lineages have evolved, each better than its predecessor at evading immunity—but these do not, in the WHO's view, merit radical changes in public-health measures. They have thus not been upgraded to VOCs and instead go by alphanumeric codes, such as "XBB.1.5" for the form of Omicron now becoming dominant in America.

The importance of lineage

Nobody knows exactly how fitter lineages of SARS-CoV-2 emerge. One hypothesis is that they originate in people with suppressed immune systems, such as those with cancer or HIV/AIDS, or who are taking drugs to prevent the rejection of transplanted organs. Individuals like these can remain infected with SARS-CoV-2 for months, giving the virus lots of time to accumulate mutations as it replicates.

Research on people with compromised immune systems has indeed found that the SARS-CoV-2 variants in their bodies have unusually large numbers of mutations. But a study of 27 such patients, published in June 2022 in *Nature Medicine*, showed that the variants they carried were missing important mutations, common in VOCs, which are related to better transmission. Nor did these patients transmit the virus to others (though that could be because many were bedridden, and some had isolated themselves). This study suggests that variants which arise in such patients are better at replicating in those patients' bodies, but no better at transmitting themselves to others.

Another theory about how VOCs originate is back-and-forth transmission of SARS-CoV-2 between people and other animals. Transmission from humans to cats, dogs, mink and deer has been documented. Some research has found that viral mutations in animals infected by human-derived SARS-CoV-2 are in parts of the genome that are changed in VOCs, such as that encoding the spike protein which the virus uses to latch onto cells.

For a VOC to arise in this way, a variant transmitted from an animal to a human must be able to spread subsequently from person to person. This did not happen in a cluster of mink-to-human SARS-CoV-2 transmissions at a fur farm in Denmark in 2020. The mink virus that infected people looked scary because it was heavily mutated in the animals. But people who caught it did not pass it to others. Still, such transmissions remain a concern. Flu viruses also cross back and forth between animals and people. And though animal flu viruses that infect humans usually go no further, there are exceptions, such as the 2009-10 flu pandemic, which was caused by a virus that probably came from pigs.

Another worry at this stage of the pandemic is the possibility of recombinant viruses. These happen when someone is infected with two variants simultaneously. This allows the pair to swap genetic material, resulting in offspring that carry muta-

Killing SARS-CoV-2

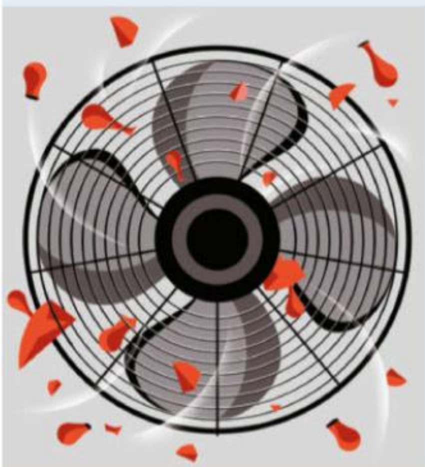
Acid drops

A way to purge air of the virus that causes covid-19

IN CHINA, ONE sign a respiratory disease is doing the rounds is a rise in sales of vinegar. Folk medicine says that when you boil it, the acetic-acid-rich fumes clear the air of whatever nastiness is bringing on the cough. And there may be a grain of truth in this belief, for one sure way to render airborne viruses, such as SARS-CoV-2, the cause of covid-19, harmless, is to make the droplets of fluid which carry them more acidic.

Tamar Kohn of the Swiss Federal Institute of Technology in Lausanne, and Thomas Peter of its Zurich counterpart, reckon, though, that this can be done well only by a stronger acid than acetic—nitric, for example. They observe in a study just published in *Environmental Science and Technology* that once inside a droplet, nitric acid creates conditions which viruses find really hard to take.

Dr Kohn, Dr Peter and their collaborators experimented with various viruses suspended in liquids of the kinds that natural virus-carrying aerosols are made



of—lung fluid and nasal mucus in particular—to see how acidic these would have to be to inactivate different viral species. Based on previous experiments on the diffusion of compounds into such droplets, they also calculated how easily nitric acid would enter them.

The logical next step would have been to study the effect on aerosol-borne viruses of air rich in nitric acid. They were, however, prevented from doing this by biosafety regulations, so instead they used a computer model based on the results they had collected.

For influenza viruses, the model suggested, normal room air is already quite harmful. Flu bugs are inactivated by it in minutes. SARS-CoV-2, however, is a harder nut to crack. In normal room air it can remain active for days. But invulnerable it is not. Droplets become death traps for it in under a minute if the acidity of the air is increased sufficiently. And that suggests an intriguing idea. Injecting nitric acid into a building's air, via its ventilation system, might, the model indicates, reduce the chance of infection for people 1,000-fold.

That would involve people breathing in strong acid. But this should not be harmful. The concentration required to destroy SARS-CoV-2 is less than a tenth of the legal safe level for workplaces in America and much of Europe.

Whether, even with that reassurance, people would actually be willing to accept acidic air in exchange for viral protection remains to be seen. But one clear consequence of this work is that it is worth considering wearing a mask in buildings such as museums and libraries which are filled with things that acid is bad for, and thus have their air treated to reduce, rather than increase, its acidity.

tions from both. That permits particularly troublesome combinations. XBB.1.5, for example, evolved from a fusion of two Omicron lineages. The original XBB lineage was good at dodging antibodies but poor at latching onto human cells (which determines infectivity). XBB.1.5 is good at both.

If a consensus exists on one thing about VOCs, says David Heymann of the London School of Hygiene and Tropical Medicine, it is that they emerge at random, and may do so anywhere at any time. No evidence is known that variants are more likely to arise in populations with less immunity, such as China's. More infections do mean a greater chance of such a random event happening, which is why China's sudden unlocking, and the surge of cases that has accompanied it, is worrisome. But the additional risk is different only in degree, not in kind, from that which already exists in the rest of the world.

Regardless of any Chinese contribution, though, periodic covid waves are here to stay. That is because none of the covid-19 vaccines so far available is good at preventing infections for more than a short period after administration. Dealing with SARS-COV-2 variants is therefore less a matter of stopping transmission than of constant monitoring and adjusting covid tests, treatments and vaccines as needed.

Data, data, data

And it is this monitoring which is getting harder. The WHO's covid-surveillance system relies on genomic-sequence data submitted from laboratories around the world to organisations such as GISAID, to show which variants are becoming dominant in various parts of the planet, whether those variants are more virulent, and how successful drugs and vaccines are against them. No sequences means no information on these points. Similarly, the WHO also tracks the proportion of cases caused by new variants that require admission to hospital, and, once there, transfer from normal wards to intensive care. That helps gauge changes in severity. But the means to collect these data, too, are disappearing, according to Dr Van Kerkhove.

There is a deeper problem, as well. Dismantling the testing, sequencing and surveillance capacity built up in the past three years risks leaving the world unprepared for the next pandemic. Hopes that politicians might, at last, see pandemic illness in the way that they see the defence of the realm, as something requiring the maintenance of a permanent establishment ready to counter threats, seem to be fading.

In this respect alone, China's botched unlocking, though terrible for the people of that country, may have a silver lining. If it causes a rethink elsewhere about the importance of monitoring for the long term, that will be a global good. ■

The changing nature of science

Ripe for disruption?

Papers and patents are becoming less challenging of orthodoxy

"IDEAS ARE like rabbits," John Steinbeck said. "You get a couple and learn how to handle them, and pretty soon you have a dozen." Scientific and technological progress is often viewed in this way. Current ideas build on previous ones. And ideas, along with papers and patents, have indeed proliferated in the recent past.

Yet despite—or perhaps because of—this productivity (papers published and patents issued each year now number in the millions), it has been documented that innovation within specific fields has been in decline. For example, a paper titled "Science in the age of selfies", published in 2016, warned of a shifting incentive-and-information landscape in biology, particularly neuroscience, that has diluted the number of high-impact discoveries.

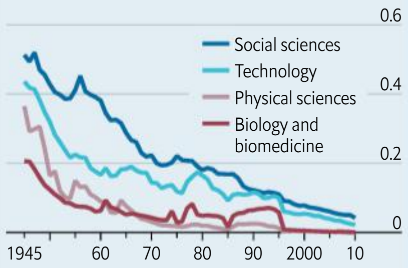
Michael Park and Russell Funk of the University of Minnesota, and Erin Leahey of the University of Arizona, have set out to determine whether this decline holds for science and technology in general. In a study published this week in *Nature* they analyse 45m papers and 3.9m patents published and filed between 1945 and 2010.

The measurement they use for this work, known as the CD index, quantifies how "consolidating" or "disruptive" each paper or patent is. A paper is consolidating (a low CD score) if later work citing it also cites the papers that it, itself, cited. Discoveries and inventions of this sort—like a patent awarded in 2005 for genetically modified soyabeans—serve to propel science forward along its existing trajectory. By contrast, a paper is disruptive (a high CD score) if it is cited by later work in the absence of citations of its predecessors. A classic example of that was the study published in 1953 by James Watson and Francis Crick on the double-helical structure of DNA. High-CD papers disrupt the status quo, fundamentally altering a field's trajectory or creating a new field altogether.

Decline and fall?

Impact of research papers*, by category

1=max disruption†



*Five years after publication
†All subsequent work does not cite predecessors' work
Source: "Papers and patents are becoming less disruptive over time", by M. Park, E. Leahey & R. J. Funk, *Nature*, Jan 2023

Both consolidating and disruptive work are needed for scientific progress, of course, but science now seems to favour the former over the latter in a potentially unhealthy way. Mr Park and Drs Leahey and Funk found that the average CD score for papers has fallen by between 92% and 100% since 1945 (see chart), and for patents between 79% and 92%. These declines are not mere artefacts of changing publication, citation or authorship practices; the researchers controlled for that. Why, then, has science become less disruptive?

One hypothesis is the low-hanging-fruit theory—that all the easy findings have been plucked from the branches of the tree of knowledge. If true, this would predict different fields would have different rates of decline in disruption, given that they are at different stages of maturity. But that is not the case. The decline the researchers found was comparable in all big fields of science and technology.

Another idea is that the decline in disruptiveness stems from one in the quality of published work. To test this, the researchers looked at two specific categories: papers in premier publications and Nobel-prizewinning discoveries. "If there were a pocket of science where the quality might have declined less, or hasn't declined," said Mr Park, "it would be in those places." But the downward trend persisted there, too.

A more likely reason for the change, the researchers argue, is that scientists and inventors are producing work based on narrower foundations. They found that citing older work, citing one's own work, and citing less diverse work all correlate with less disruption. As the amount of published science grows, the effort required to master a pool of knowledge that is both deepening and narrowing as the years roll by may inhibit the ability to form creative connections between disparate fields. Here is an argument for the rebirth of the renaissance human.

Mr Park maintains there is room for optimism. Though the average disruptiveness of discoveries has declined, the number of "highly disruptive" ones has remained constant. Humanity does not appear to be reaching the end of science. Albert Michelson, winner of the 1907 Nobel prize in physics for his work on the immutability of the speed of light, which underlay Albert Einstein's special theory of relativity, is as wrong now as he was in 1894, when he said that it was "probable that most of the grand underlying principles have been firmly established". ■



Hellenistic history

Kings of the world

AIGAI, GREECE

A museum of the Macedonian kings raises questions about the arc of ancient history—and the legacies of empire

In a misty stretch of northern Greek countryside, wedged between forested hills and a coastal plain west of Thessaloniki, is the modern village of Vergina. But Angeliki Kottaridi, who has spent a lifetime digging here, prefers the spot's ancient name, Aigai—pronounced *Egg-eh*—meaning goats, which still abound nearby. The place was utterly obscure until treasures started emerging from its damp earth about half a century ago.

As a 20-year-old student, Ms Kottaridi witnessed an electrifying moment in archaeology: the discovery in 1977 of a royal tomb, complete with golden artefacts and beautiful frescoes, which, controversially at first, her mentor Manolis Andronikos identified as the resting place of Philip II of Macedon. Inheriting Andronikos's mantle, Ms Kottaridi and her team have since dug out a royal palace three times the size of the Parthenon; dozens more royal tombs and over 1,000 regular ones; and a theatre that must be the site of Philip's assassination during a wedding feast in 336BC.

He was succeeded by his 20-year-old son, Alexander (pictured in a mosaic from Pompeii). The rest is world history: by the time he died in 323BC, Alexander the Great commanded an empire stretching from Egypt to the Hindu Kush. A new museum that opened on December 19th explores his family's accomplishments—which, Ms Kottaridi insists, went well beyond conquest. For her, the capital of ancient Macedonia was the prototype of a kind of urban civilisation that later stretched from the Maghreb to Central Asia. Her work, and the museum, challenge conventional views of ancient history—and raise pointed questions about the legacies of empire.

Despite its brevity, Alexander the Great's reign has always been revered. Turks, Arabs and Persians call him Iskander, a popular name for people and places. An exhibition now at the British Library in London recalls the many ways in which Alexander's tale has been told, from medieval manuscripts to modern animation. For Ms Kottaridi, two aspects of the monarchs' story are especially intriguing.

First, the efficiency with which Philip forged a sophisticated, money-based society from a group of rough herdsmen. As Alexander once told his soldiers, his father "found a tribe of impoverished vagabonds, mostly dressed in skins, feeding a few sheep...He made you city-dwellers, he brought you law, he civilised you."

The second is the way rapid urbanisation of the kind Philip fostered was repeated across the so-called Hellenistic world—in other words, throughout the successor states, tinged with Greek influence, into which Alexander's empire dissolved. The Macedonian conquerors, says Ms Kottaridi, bequeathed a distinctive form of urban society: not as democratic or sovereign as golden-age Athens, but endowed with well-functioning institutions, ample public amenities and a civic pride in which people of many languages and faiths could participate. As a panel in the new museum puts it, Alexander's expeditions "would transform the age-old clash between Europe and Asia into the most creative synthesis and coexistence of cultures that the world had ever seen".

The arc of ancient history is typically sketched very differently. The focus is generally on the Hellenic city-states that flourished in the fifth and early fourth century BC: Athens above all, but also Corinth, ▸▸

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Thebes and warlike Sparta. From this perspective, the rise of Philip and Alexander, who subordinated the southern Greek cities, was a retrograde turn. In Ms Kottaridi's view, the Greek city-states had been exhausted by internecine fighting. The cosmopolitan cities that developed in Alexander's wake represented an advance.

Privately, she goes further. Hellenistic cities, she says, played a vital role in shaping today's religious world, as hubs of early Christianity and, arguably, of Buddhist culture too. For example, the Indo-Greek kings who held sway in what today is the Pakistani Punjab not only practised Buddhism; they actively propagated that faith and its artistic expression.

To help visitors grasp this scope, the museum presents giant video footage of Hellenistic remains in the Levant and points east. This is the first step, Ms Kottaridi says, in the assembly of a huge digital exhibition of the Hellenistic era. Amid the weapons, jewellery and utensils, perhaps the finest physical artefact is a sculpture of Philip's mother, Queen Eurydice, clad in flowing robes. As a model for the portrayal of royal or divine women, this artistic form recurs widely, not least in depictions of the Virgin Mary. The museum's inner courtyard is an exact reproduction, using many original parts, of the upper floor of the palace, the nearby site of which should open to the public soon.

Does Ms Kottaridi exaggerate the Hellenistic cities' role as the crucible of the modern world? Quibblers might point out that Christianity, Judaism and Islam all kicked against the polytheistic Greek spirit spread far and wide by the conquering Macedonians. Yet at a minimum, Hellenistic culture was a catalyst for the development of these faiths, which partly evolved in great cities such as Alexandria in Egypt.

The legacy of the Macedonian kings in the eastern reaches of the Greek-tinged world—where from 200BC people read Greek literature and practised Buddhism—is also contested. In an echo of disputes over later colonisers, Indian scholars are understandably averse to the idea of Alexander as leader of a "civilising mission".

As Meenakshi Lekhi, an Indian government minister, recently told a conference, exchanges between Greek and Indian cultures long predated his conquests. According to Yaamir Badhe, a classicist of Indian origin, those Homer-reading Buddhists should not be seen as the spearhead of Western imperialism. Rather, they were a creative presence in a local culture marked by openness to outside influences.

That is exactly the sort of sweeping historical discussion that Ms Kottaridi's new museum hopes to stimulate. Rural Greece may seem an odd starting-point for such debates—but then, it was an unlikely base for world conquest. ■

Genetic engineering

Healing nature

As Gods. By Matthew Cobb. *Basic Books; 464 pages; $35. Published in Britain as "The Genetic Age"; Profile Books; £25*

In 2018 HE JIANKUI, a Chinese biologist, made headlines around the world when he announced the birth of the first genetically modified human beings. Using a new and powerful gene-editing technique called CRISPR-Cas9, Dr He had tried to recreate mutations in the babies that are known to confer resistance to HIV, the virus that causes AIDS.

Dr He may have been expecting plaudits. Instead, he got brickbats. Geneticists decried the experiment (one called it an "ethical fiasco"). The gene editing turned out to have gone wrong, introducing new, never-before-seen mutations in the babies instead of the intended ones. And, crucially, Dr He's tweaks are heritable, meaning the children will pass on the botched edits to their own offspring. In 2019 he was sentenced to three years in prison and a fine of 3m yuan ($435,000).

Apart from nuclear physics, which has empowered a handful of leaders to destroy civilisation, few branches of science have inspired as much public dread and disputation as genetic engineering, which allows tinkering with the stuff of life itself. These moral concerns animate a new book by Matthew Cobb, a zoologist at the University of Manchester.

"As Gods" is a history of both genetic engineering and the worries—justified, dubious and sometimes outright conspiracist—it has provoked. The technology has had many successes. The insulin needed by diabetics is now produced by modified bacteria, for instance, instead of being laboriously harvested from pig corpses. Modified viruses carrying fixed versions of malfunctioning genes have been able to cure some rare diseases, such as spinal muscular atrophy, for which a genetic-engineering treatment was recently approved in Britain.



But there have been many setbacks, too. The tide of money that flowed into the field from the 1970s raised expectations that were bound to be disappointed. Research has been plagued by imprecise tools that are hard to use well. Genetics as implemented by Mother Nature has proved to be a knotty, Heath Robinson nightmare, with individual genes affecting many of an animal's or plant's characteristics at once, often unpredictably.

Meanwhile, though scientists can in effect read the letters of the genetic code, translating them into meaningful words and sentences has been much harder than most observers would have guessed 30 years ago. Genetically modified crops have been a mixed bag; genetic therapy for the sick has failed more than it has succeeded.

Mr Cobb rattles through these developments briskly, accessibly explaining the molecular basics of gene editing and all sorts of possible uses for it, from fixing the mutations that cause diseases to turning bacteria into drug factories. More advanced and speculative ideas include "gene drives"—bits of genetic information that do not obey the usual rules of natural selection, and have been proposed as a way of wiping out pests such as mosquitoes—and the long-standing dream of human genetic enhancement.

There are glitches in this book as there are in the science. The discussion of Dr He's work feels polemical and a bit overwrought; that ends up diluting its impact rather than amplifying it. The occasional technical term goes unexplained in Mr Cobb's otherwise readable prose. Some of his objections to human genetic engineering are based on the observation that the tools involved are, for now, rather unreliable. That is an important obstacle—but readers may be more interested in the bigger question of what could or should happen if those problems are solved.

Nevertheless, "As Gods" is an excellent primer for anyone seeking a well-informed discussion of the moral implications of this enduringly controversial science. Readers are left with the impression that, for all the breakthroughs, it has yet to live up to its promise. It is still worth pondering what might happen if—or when—it ultimately does. ■

Eerie fiction

White-out

The Thing in the Snow. By Sean Adams. *William Morrow; 288 pages; $27.99 and £22.95*

"The heap", Sean Adams's debut novel of 2020, was a darkly comic, richly inventive dystopian tale that followed various lives connected with a huge skyscraper's miraculous rise and calamitous fall. When the building collapses, a character searches through the rubble for his brother. His senses fail him, starting with smell—less a hindrance than "a defence mechanism to guard against the bouquet of death that hung in the air".

The American author's new novel features a beleaguered protagonist in danger of losing his sanity rather than his senses. "The Thing in the Snow" is sparer, with a smaller cast, a bare-bones backdrop and a threadbare plot. Yet the result is by no means insubstantial. Beneath the minimalism is a fiendish mystery and a sharp satire shot through with offbeat charm.

Hart is one of three caretakers at the Northern Institute, an abandoned research facility in the frozen back of beyond. Every week he receives a fresh supply of provisions along with new assignments which he and his subordinates, Gibbs and Cline, must carry out. They begin each day with "coffee and light socialisation", then turn to mundane and meaningless tasks, which include checking the noise of doors, measuring the flatness of surfaces and testing the "structural integrity" of chairs.

This routine is interrupted when they spot a small black object in the snowscape outside. Hart reports it to Kay, his distant boss, and waits a week for her response. Meanwhile, the team encounter other disturbances (flickering lights, "autobiographical confessions" scrawled under tables). Hart feels increasingly unmoored from reality, unable to keep track of time or deal with challenges to his authority. When the three caretakers have a showdown about the thing in the snow, he takes matters into his own hands by venturing outdoors, and off-limits, to investigate.

Readers who prefer conventional narratives should look elsewhere. Others will find that Mr Adams's novel baffles and beguiles in equal measure. Much of it is deliberately opaque, from Hart's hazy mindset to his undisclosed location, "a remote region where the snow never melts". There are Kafkaesque undertones in the futility of Hart's work and the absurdity of his predicament. A pervasive chill contributes to moments of disquiet—offset by the strain of dry humour in the caretakers' exchanges and their encounters with Gilroy, the last remaining researcher at the institute.



The truth is out there

In his acknowledgments, Mr Adams call his book a "weird little project". Weird it certainly is, but also rather wonderful. ■

Courtly love

Not so gentle knights

The Tudors in Love. By Sarah Gristwood. *St Martin's Press; 400 pages; $29.99. Oneworld Publications; £20*

As "The edifying Book of Erotic Chess" shows, chess once carried a more thrilling charge than it does today. The pages of this 15th-century manual, which mingle poetry with lechery and a touch of hardcore pawn, also make something else clear. If chess used to be more erotic, then the erotic used to be more chess-like, too.

In bygone centuries aristocratic love was not merely a thing of passion but a complex and courtly game, played with knights and bishops, in which the most dazzling figure might be the queen—but the most important was the king. Anne Boleyn forfeited her head not merely because she failed to produce a male heir but also, argues Sarah Gristwood in "The Tudors in Love", because she had lost at the game of courtly love. For it, like chess, was played until one side or the other was routed.

Few people are much interested in courtly love today. T.E. Lawrence galloped into battle in Arabia with a copy of Thomas Malory's "Le Morte d'Arthur" in his saddlebag; John Steinbeck rewrote Malory using a ballpoint stuck into a goose quill. But the mannered pantomime of courtly love, with its Guineveres, gauntlets, Lancelots and favours, has, on the whole, fallen out of fashion. This, Ms Gristwood argues, is a shame, for it is impossible to understand the Tudors—not to mention Dante, Chaucer and the rituals of modern romance—without considering Renaissance-era love, above all the courtly kind.

Yet much like the ideal courtly maiden, the precise definition of courtly love is hard to pin down. It seems to have begun as a literary trope among French troubadours, before an 11th-century ecclesiastical clampdown on sexuality apparently caused a literary ideal to become a pragmatic one. Carnal romping was out; largely chaste mooning around was in.

However, the *amor purus* of the "gentil knight" was not always as pure, nor the knight so gentil, as the literary ideal implies. Take William IX of Aquitaine, grandfather of Eleanor, seen as "one of the most courtly men in the world". A quotation from William musing on his beloved has survived: "God let me live long enough to get my hands under her cloak!"

Soon, courtly love was popular enough to have its own genre of slightly creepy self-help guides, including one that offered a series of points on how the infatuated courtly lover should behave. Rule two advised that "He who is not jealous cannot love." Point 15 explained that "Every lover regularly turns pale in the presence of his beloved." Few things shout unbridled passion like a numbered how-to list.

This book is itself passionately written (at times a little too much so—it would have been a better book with fewer exclamation marks). Desire and matrimony clearly skewed Tudor history, and there are moments when courtly love itself seems to have done so. The prolonged smouldering of Henry VIII's feelings for Anne adhered to the courtly code, as did the flirtations with courtiers that contributed to her downfall. In Thomas Cromwell's hands, Ms Gristwood writes, courtly love became not a game but "a tool".

In the end, though, its divorce from reality is the big problem with courtly love. Often it feels like a contrived conceit with which the showy elevated their lusts. It is a relief when, as the book progresses, later writers such as Shakespeare and Erasmus—still widely read and admired today—pop up to laugh heartily at the genre.

But perhaps courtly love foresaw its own demise. As rule 17 in that list had it, "A new love puts to flight an old one." That goes for literature as well as paramours. ■

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Economic & financial indicators

Economic data

	Gross domestic product % change on year ago latest		quarter*	2022†	Consumer prices % change on year ago latest		2022†	Unemployment rate %		Current-account balance % of GDP, 2022†	Budget balance % of GDP, 2022†	Interest rates 10-yr gov't bonds latest,%		change on year ago, bp	Currency units per $ Jan 4th	% change on year ago
United States	1.9	Q3	3.2	1.9	7.1	Nov	8.1	3.7	Nov	-3.5	-5.5	3.7		203	-	
China	3.9	Q3	16.5	3.1	1.6	Nov	2.0	5.7	Nov‡§	2.4	-5.6	2.6	§§	3.0	6.88	-7.4
Japan	1.5	Q3	-0.8	1.5	3.8	Nov	2.5	2.5	Nov	1.9	-6.3	nil		-8.0	132	-12.1
Britain	1.9	Q3	-1.2	4.4	10.7	Nov	8.0	3.7	Sep††	-5.9	-6.6	3.8		282	0.83	-10.8
Canada	3.9	Q3	2.9	3.1	6.8	Nov	6.7	5.1	Nov	-0.2	-2.3	3.1		155	1.35	-5.9
Euro area	2.3	Q3	1.3	3.1	10.1	Nov	8.4	6.5	Oct	1.3	-4.2	2.3		241	0.94	-6.4
Austria	1.7	Q3	0.9‡	4.8	10.6	Nov	8.8	4.6	Oct	-0.7	-3.5	2.9		274	0.94	-6.4
Belgium	1.9	Q3	0.7	2.7	10.4	Dec	10.3	5.4	Oct	-1.5	-4.8	3.0		274	0.94	-6.4
France	1.0	Q3	0.7	2.5	5.9	Dec	6.0	7.1	Oct	-1.9	-5.3	3.0		279	0.94	-6.4
Germany	1.3	Q3	1.6	1.6	8.6	Dec	8.4	3.0	Oct	4.1	-4.1	2.3		241	0.94	-6.4
Greece	2.1	Q3	-2.1	5.0	8.5	Nov	9.6	11.6	Oct	-5.9	-4.5	4.5		323	0.94	-6.4
Italy	2.6	Q3	1.9	3.7	11.8	Nov	8.6	7.8	Oct	-0.8	-5.7	4.3		307	0.94	-6.4
Netherlands	3.1	Q3	-0.9	4.2	9.9	Nov	12.0	3.6	Nov	6.3	-1.4	2.6		262	0.94	-6.4
Spain	4.4	Q3	0.2	4.5	5.9	Dec	8.5	12.5	Oct	0.2	-4.7	3.5		291	0.94	-6.4
Czech Republic	1.7	Q3	-0.6	2.5	16.2	Nov	15.1	2.3	Oct‡	-4.0	-5.3	5.0		190	22.6	-3.7
Denmark	3.2	Q3	1.1	2.8	8.9	Nov	7.9	2.6	Oct	9.0	0.9	2.5		242	7.01	-6.1
Norway	2.5	Q3	6.3	3.5	6.5	Nov	6.4	3.2	Oct‡‡	18.8	12.2	1.4		76.0	10.1	-12.5
Poland	4.5	Q3	4.1	5.0	17.5	Nov	14.6	5.1	Nov§	-3.3	-3.7	6.4		244	4.40	-8.2
Russia	-3.7	Q3	na	-2.3	12.0	Nov	13.2	3.7	Nov§	12.3	-1.1	10.3		191	72.8	3.2
Sweden	2.6	Q3	2.4	3.0	11.5	Nov	7.9	6.4	Nov§	3.7	-0.5	2.4		206	10.5	-13.6
Switzerland	0.5	Q3	1.0	2.0	2.8	Dec	3.0	2.0	Nov	5.2	-1.0	1.4		145	0.93	-2.1
Turkey	3.9	Q3	-0.5	5.1	64.3	Dec	73.5	9.9	Oct§	-8.1	-3.4	8.7		-1435	18.7	-27.7
Australia	5.9	Q3	2.6	3.7	7.3	Q3	6.4	3.4	Nov	2.0	-1.9	3.9		218	1.46	-5.5
Hong Kong	-4.5	Q3	-10.0	-2.4	1.8	Nov	1.9	3.7	Nov‡‡	4.4	-6.4	3.6		208	7.82	-0.4
India	6.3	Q3	19.3	6.9	5.9	Nov	6.5	8.3	Dec	-2.7	-6.4	7.3		80.0	82.8	-10.0
Indonesia	5.7	Q3	na	5.1	5.5	Dec	4.2	5.9	Q3§	1.1	-3.9	7.0		67.0	15,588	-8.2
Malaysia	14.2	Q3	na	7.5	4.0	Nov	3.4	3.6	Oct§	1.5	-6.0	4.0		35.0	4.40	-4.8
Pakistan	6.2	2022**	na	6.2	24.5	Dec	19.9	6.3	2021	-3.9	-7.8	13.8	†††	229	227	-22.2
Philippines	7.6	Q3	12.1	7.7	8.1	Dec	5.6	4.5	Q4§	-4.2	-7.8	7.1		227	55.9	-8.2
Singapore	2.2	Q4	0.8	3.5	6.7	Nov	6.1	2.1	Q3	18.7	-1.0	3.0		130	1.34	0.8
South Korea	3.1	Q3	1.3	2.6	5.0	Dec	5.1	2.3	Nov§	1.2	-3.1	3.6		129	1,272	-6.1
Taiwan	4.0	Q3	7.5	3.0	2.3	Nov	2.9	3.6	Nov	12.4	-1.4	1.4		65.0	30.7	-10.2
Thailand	4.5	Q3	5.0	3.2	5.5	Nov	6.1	1.4	Oct§	-1.2	-5.0	2.6		74.0	34.0	-2.3
Argentina	5.9	Q3	7.0	5.6	92.4	Nov	72.8	7.1	Q3§	-0.5	-4.2	na		na	179	-42.3
Brazil	3.6	Q3	1.6	2.8	5.9	Nov	9.3	8.3	Oct§‡‡	-3.0	-4.7	13.3		198	5.46	3.9
Chile	0.3	Q3	-4.6	2.3	13.3	Nov	11.6	7.9	Nov§‡‡	-8.1	-0.3	5.3		-32.0	856	-0.8
Colombia	7.1	Q3	6.4	6.2	12.5	Nov	10.1	9.5	Nov§	-8.0	-4.7	13.4		500	4,935	-17.4
Mexico	4.3	Q3	3.6	2.8	7.8	Nov	7.9	3.0	Nov	-1.0	-2.5	8.9		113	19.4	5.7
Peru	1.7	Q3	1.8	2.6	8.5	Dec	7.8	9.0	Nov§	-3.4	-1.5	7.9		204	3.83	3.7
Egypt	4.4	Q3	na	6.6	18.8	Nov	13.6	7.4	Q3§	-4.6	-7.4	na		na	26.4	-40.5
Israel	7.6	Q3	1.9	6.1	5.3	Nov	4.5	3.9	Nov	3.4	0.2	3.5		249	3.53	-12.5
Saudi Arabia	3.2	2021	na	8.9	2.9	Nov	2.5	5.8	Q3	13.1	3.4	na		na	3.76	nil
South Africa	4.1	Q3	6.6	1.9	7.7	Nov	6.9	32.9	Q3§	-1.3	-5.5	10.0		60.0	16.9	-5.5

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

Markets

In local currency	Index Jan 4th	% change on: one week	Dec 31st 2021
United States S&P 500	3,853.0	1.8	-19.2
United States NAScomp	10,458.8	2.4	-33.1
China Shanghai Comp	3,123.5	1.2	-14.2
China Shenzhen Comp	2,005.4	1.6	-20.7
Japan Nikkei 225	25,716.9	-2.4	-10.7
Japan Topix	1,868.2	-2.1	-6.2
Britain FTSE 100	7,585.2	1.2	2.7
Canada S&P TSX	19,588.8	1.6	-7.7
Euro area EURO STOXX 50	3,974.0	4.3	-7.5
France CAC 40	6,776.4	4.1	-5.3
Germany DAX*	14,490.8	4.1	-8.8
Italy FTSE/MIB	24,860.6	4.6	-9.1
Netherlands AEX	717.5	3.3	-10.1
Spain IBEX 35	8,559.8	3.6	-1.8
Poland WIG	59,754.4	5.5	-13.8
Russia RTS, $ terms	949.9	1.7	-40.5
Switzerland SMI	11,140.3	3.0	-13.5
Turkey BIST	5,523.5	3.3	197.3
Australia All Ord.	7,249.1	-0.2	-6.8
Hong Kong Hang Seng	20,793.1	4.5	-11.1
India BSE	60,657.5	-0.4	4.1
Indonesia IDX	6,813.0	-0.5	3.5
Malaysia KLSE	1,469.6	-0.7	-6.3

	index Jan 4th	% change on: one week	Dec 31st 2021
Pakistan KSE	40,539.3	3.2	-9.1
Singapore STI	3,242.5	-0.8	3.8
South Korea KOSPI	2,256.0	-1.1	-24.2
Taiwan TWI	14,199.1	0.2	-22.1
Thailand SET	1,673.3	1.6	0.9
Argentina MERV	201,060.6	-0.7	140.8
Brazil BVSP	105,334.4	-4.4	0.5
Mexico IPC	50,161.3	1.0	-5.8
Egypt EGX 30	15,557.5	6.7	30.6
Israel TA-125	1,815.8	0.7	-12.4
Saudi Arabia Tadawul	10,531.9	0.4	-7.1
South Africa JSE AS	74,567.6	0.4	1.2
World, dev'd MSCI	2,624.4	1.9	-18.8
Emerging markets MSCI	974.2	1.5	-20.9

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 31st 2021
Investment grade	154	120
High-yield	494	332

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

Commodities

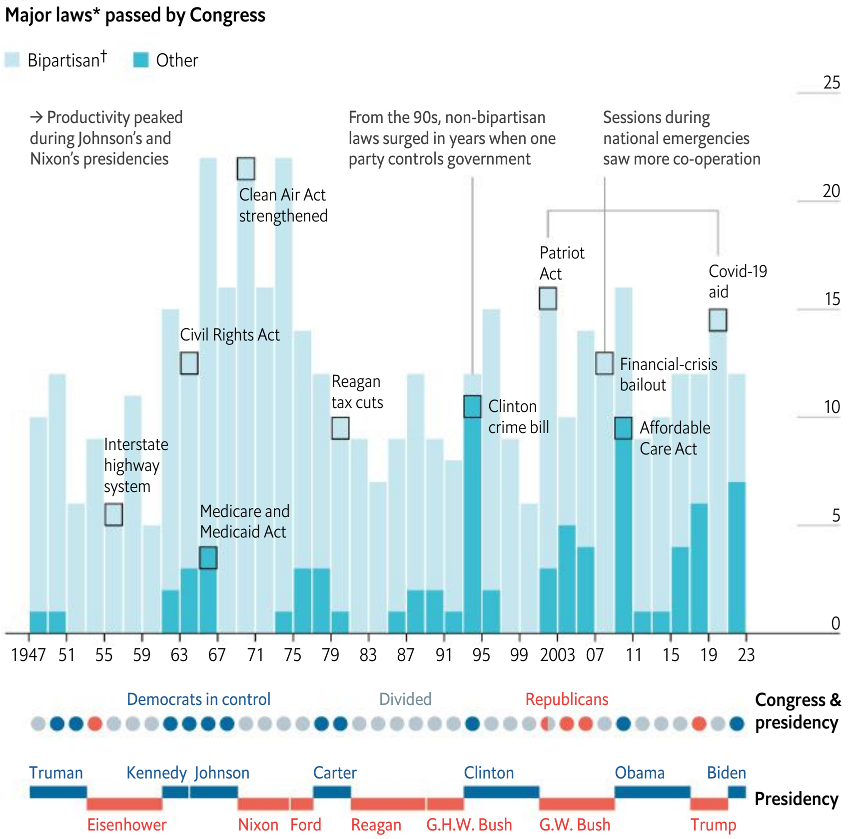
The Economist commodity-price index

2015=100	Dec 20th	27th	Jan 3rd*	% change on month	year
Dollar Index					
All Items	150.7	153.9	156.2	4.0	-4.7
Food	137.1	139.8	142.0	6.2	0.9
Industrials					
All	163.5	167.1	169.5	2.3	-8.7
Nfa†	131.5	130.5	129.5	-3.6	-21.2
Metals	172.9	177.9	181.3	3.7	-5.6
Sterling Index					
All items	189.5	195.5	198.6	5.8	7.5
Euro Index					
All items	157.1	160.3	164.1	3.5	2.1
Gold					
$ per oz	1,817.3	1,823.9	1,830.0	3.1	0.9
West Texas Intermediate					
$ per barrel	80.2	84.1	82.1	3.1	2.5

Sources: CME Group; Cotlook; Darmenn & Curl; Datastream from Refinitiv; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional †Non-food agriculturals.

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→ During Joe Biden's presidency, bipartisanship and productivity in Congress have remained near historical levels



114th Congress (Obama)

Selected laws	Democrats in favour, %‡	Republicans in favour, %‡
Expedited drug approval	94	95
Puerto Rico's debt	87	84
Education standards	100	75
Funding for highways	99	73
Limiting NSA surveillance	87	62
Repeal of oil export ban	88	56

117th Congress (Biden)

Selected laws	Democrats in favour, %‡	Republicans in favour, %‡
Infrastructure funding	99	23
Same-sex marriage	100	22
Electoral votes	100	21
Gun background checks	100	19
Covid-19 stimulus	100	*nil*
CO_2 emissions, drug prices	100	*nil*

*Recorded by David Mayhew, a political scientist †Majority support within both parties in at least one chamber of Congress ‡Share of total yea or nay votes for law including named provision, House and Senate weighted equally Sources: David Mayhew; Matt Grossmann; *The Economist*

The secret is out

The 117th Congress accomplished a lot. So did its recent predecessors

"I THINK YOU'RE gonna see the fever break," Joe Biden said of Republicans in Congress who had reflexively opposed laws backed by Democrats. It was 2012, and Mr Biden was predicting better legislative co-operation during Barack Obama's second term. His faith has not wavered since then. In 2019 he spoke of a looming Republican "epiphany", and in March 2021 he said it would arrive "between now and 2022".

Pundits rolled their eyes, but Mr Biden may have had the last laugh. The 117th session of Congress, which ended on January 3rd, is being hailed as a model of bipartisan productivity. Laws that recognised gay marriages, raised spending on infrastructure and semiconductors, tightened background checks for gun buyers and changed how electoral votes are counted in presidential elections all won between 12 and 18 votes from the 50 Republican senators.

Has Mr Biden revived old-fashioned deal-making? On numerical measures of productivity and bipartisanship, the 117th Congress looks ordinary. But surprisingly, this is not because it has been over-hyped. Instead, the legislature achieved more during Mr Obama's and Donald Trump's presidencies than its reputation suggests.

Because laws range in importance from reshaping an economy to renaming a post office, quantifying lawmakers' work is a thorny task. The academic best known for tackling it, David Mayhew of Yale, has compiled lists of "major laws" on a provision-by-provision basis. One way he classifies policies as bipartisan is if the law containing them was backed by majorities of both parties in either the House or Senate.

Not all major laws have equal impact, and this definition of bipartisan excludes bills like the recent Bipartisan Infrastructure Act. But on these criteria, the 117th Congress passed 12 major laws, near the average of 12.7 in 2001-21. Just five were bipartisan, the fewest since 2004. Every Republican opposed its two big spending bills.

Even on a qualitative basis, this session fails to stand out. In 2009-10 Congress passed Mr Obama's landmark health-care reform and an $800bn economic stimulus, overhauled banking regulation, beefed up pay-discrimination laws and let gay soldiers serve openly. All but one of those bills won at least three Republican Senate votes.

Other sessions since then are also comparable to the 117th Congress. In 2015-16 the legislature limited telephone surveillance, gave states control over educational testing, sped up approval for drugs and medical devices, authorised oil exports, spent $305bn on transport and set up a bankruptcy process for Puerto Rico. Under Mr Trump, it passed bipartisan laws reducing sentences for drug crimes, approving a North American trade deal and doling out trillions of dollars in response to covid-19.

Why, then, is Mr Biden receiving such plaudits? One explanation is a pattern that Simon Bazelon and Matt Yglesias, two political analysts, call "secret Congress". As long as the media do not cover a bill, they argue, lawmakers from both parties can collaborate well. But once the press pays attention, partisan passions are inflamed and compromise becomes too costly.

Now reeling from electoral defeats, Republican lawmakers may have decided that political gains with swing voters from being seen working with the president outweigh the price with their base. If so, Mr Biden's distinctive success may not be persuading Republicans to vote for his bills, but getting them to admit their support. ■



King of the beautiful game

Edson Arantes do Nascimento, aka Pelé, footballer, died on December 29th, aged 82

He was just a boy, only 17. Yet in the World Cup final of 1958 Edson Arantes do Nascimento, better known as Pelé, showed the poise and supreme skill that would mark his career. As Brazil led Sweden, the hosts, by two goals to one he received a high pass in the penalty area. With a defender on his shoulder, he caught the ball on his chest, took one pace and flipped the ball high over another defender before running to meet it and driving an unstoppable volley low into the net.

Though he said so himself, it was a nice goal. After looping in another, realising they were about to win the whole tournament, he passed out with emotion on the pitch. He felt he had achieved everything, all his dreams come true—even to a fling with a blonde, blue-eyed Swedish girl who was crazy for this little black *Crioulo,* as he loved to call himself.

This was only the first of three World Cups he won, more than any other player. It might have been four, but in 1966 the Bulgarian and Portuguese defenders kicked him to pieces, the referees didn't protect him and Brazil, he thought, were badly prepared anyway, so they crashed out.

Three Argentines—Alfredo Di Stéfano, Diego Maradona and Lionel Messi—all had their claims to be the world's greatest footballer. But he held the world record for goals, 1,279 in 1,363 matches, and that was unlikely to be surpassed. Even a goal he didn't actually score, against England in the 1970 World Cup, became famous, because few—including him—could work out how Gordon Banks had managed to save it. Ever confident, he shouted "Goal!" as he launched his header. It was scooped over the bar.

As a forward he was not that tall, but he was strong, fast and had thighs as thick as his waist. He could read the game like a book, and control the ball as if it was drawn to him like a magnet. He could also tell exactly where he was needed, and when, and what the opposition might have in mind to try to block him. All this seemed to make him a natural captain, but he never wanted that role officially. He would just show the team his best moves, organising by example, and was happy to provide the killer pass for others to finish.

Dribbling was his great skill, flummoxing defenders with feints and sudden stops and starts. He could shoot for goal powerfully with either foot and despite his height, or lack of it, was a spring-heeled header of the ball. He jumped so easily over Tarcisio Burgnich, the Italian marking him in the 1970 World Cup final, that Burgnich doubted he was flesh and bone at all. Then he scored the first goal. He knew he was the best player in that tournament and, with the next World Cup four years away, he declared he wouldn't play any more.

He retired, he felt, at his best, and before football stopped being fun. His World Cup goal at 17 had been nothing but joy, no nerves, no responsibility, but his thousandth goal, in 1969 from a penalty, was completely different. His legs shook, the whole of the Maracanã stadium was yelling, and he was suddenly crushed by the thought that he, three times world champion, most famous footballer, could not miss this. He had never felt pressure like it.

Nor had he imagined he would face it. He was born in poverty in a town in the south-west of Minas Gerais state; his great-grandparents had been slaves. His first trainer was his father, a professional footballer whose career at Vasco da Gama was ended early by injury. His mother preferred him to be unhurt and earning proper money. Even a ball was too costly: he played with anything roughly round, socks stuffed with paper, mangoes or a bundle of rags. His lifetime love took root then, and never left him. The nickname "Pelé", a classmate's tease, annoyed him at first ("Edson" was more serious, after Thomas Edison), but he liked it better when he learnt it meant "miracle" in Hebrew. And miracles followed. At only 15 he was snapped up by Santos, his first professional club. Largely because of him it became the best team in the world in the early 1960s, winning two Intercontinental Cups.

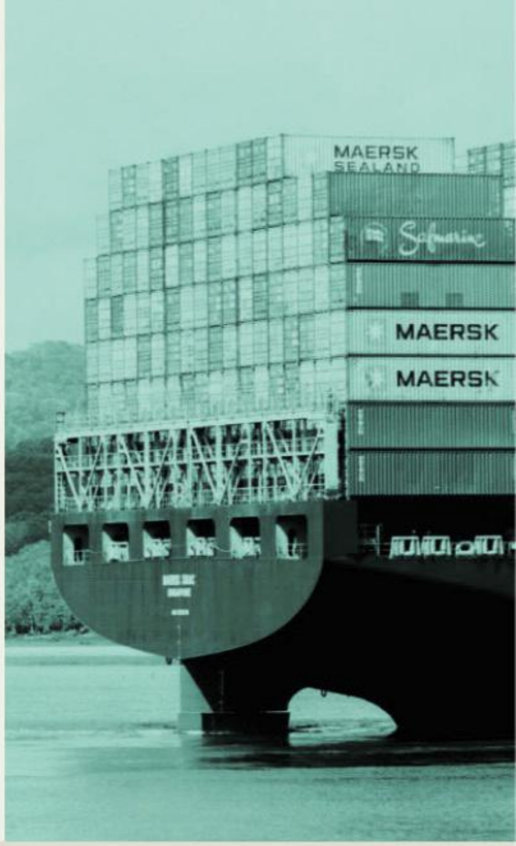
Several big European clubs begged him to join them: Real Madrid, AC Milan, Bayern Munich. But Santos and Brazil's government refused a transfer. Besides, life was so nice at Santos that he didn't want to change, and he went on playing for the club long after he left the international game. He played before football was a global business: half his career was in black and white. In today's game he would have been a billionaire. As it was, he had a sharp eye for money in deals off the pitch. At 34 he came out of retirement to help launch "soccer" in the United States, joining the New York Cosmos because, he said, Henry Kissinger persuaded him. By 1977, when his tenure ended, he was being called "O Rei", "The King"—the very name that the playwright Nelson Rodrigues, a towering figure in Brazil, had given him years before when he had first seen him play for Santos.

Santos was always close to his heart; as was Vasco, where his father had taken him as a toddler to watch training sessions. In 1994 he even accepted a job as sports minister in the democratic government of Fernando Henrique Cardoso. He piloted a law to clean up Brazilian club football, but it was neutered in the Congress, where a powerful lobby defended the corrupt state of things as they were. The activities of that bunch of crooks and the poverty he saw in his rich country often made him cry.

His life off the pitch was complicated, with three marriages and at least seven children, one of whom—a daughter born of an affair with a cleaner—he refused for a long time to recognise. Women aside, though, he kept his life simple. He hoped to pass as an ordinary guy at airports, and never used the red diplomatic passport President Lula gave him. His way of winding down was to go fishing or to play *pião* with the wooden top he always carried, spinning it on his palm as long as he could. He was never an activist; just by being himself, he embodied black dignity. And he revelled in the beautiful game he played. His one regret was that he had never scored in the World Cup with a bicycle kick. ■

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